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PACIFIC SARDINE (PILCHARD) EGGS AND LARVAE AND OTHER FISH LARVAE, PACIFIC COAST - 1952

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Explanatory Note

The series embodies results of investigations, usually of restricted scope, intended to aid or direct management or utilization practices and as guides for administrative or legislative action. It is issued in limited quantities for the official use of Federal, State or cooperating Agencies and in processed form for economy and to avoid delay in publication.

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United States Department of the Interior, Douglas McKay, Secretary
Fish and Wildlife Service, John L. Farley, Director

PACIFIC SARDINE (PILCHARD) EGGS AND LARVAE AND OTHER FISH LARVAE, PACIFIC COAST - 1952

By Elbert H. Ahlstrom
Fishery Biologist

Special Scientific Report: Fisheries No. 123

Washington, D. C.
April, 1954

PACIFIC SARDINE (PILCHARD) EGGS AND LARVAE AND OTHER FISH LARVAE, PACIFIC COAST, 1952

The results of quantitative sampling of eggs and larvae of the Pacific sardine or pilchard (Sardinops caerulea) off the west coast of California and Baja California during 1952 are given in this report, the third in a continuing yearly series. Also included, are records of the larvae of 5 other species: northern anchovy (Engraulis mordax), jack mackerel (Trachurus symmetricus), hake (Merluccius productus), Pacific mackerel (Pneumatophorus diego), and rockfish (Sebastodes spp.).

The material was collected on biological-oceanographical cruises being made by agencies participating in the California Cooperative Oceanic Fisheries Investigations (formerly called the California Cooperative Sardine Research Program). The investigations are sponsored by the Marine Research Committee, and are carried out cooperatively by the South Pacific Fishery Investigations of the United States Fish and Wildlife Service, the Scripps Institution of Oceanography of the University of California, the Bureau of Marine Fisheries of the California Department of Fish and Game, and the Hopkins Marine Station of Stanford University.

The data are presented in 8 tables. Standardized haul factors for plankton hauls made on survey cruises during 1952 are listed in table I. Additional data concerning these hauls may be found in "Zooplankton volumes off the Pacific coast, 1952", Special Scientific Report: Fisheries, No. 100; these include position of occupancy, date, hour, depth of haul, and volume of water strained.

A record of all collections containing Pacific sardine eggs in 1952 is given in table II. The eggs are enumerated by age (in days) since spawning, and for each haul the average number of eggs spawned per day has been determined.

The larvae of 3 species are enumerated by size: Pacific sardine in table III, anchovy in table IV, jack mackerel in table V. The larvae of the remaining species are tabulated by number only: hake in table VI, Pacific mackerel in table VII, and rockfish in table VIII.

It is a pleasure to acknowledge the wholehearted cooperation given by the participating agencies. All personnel of the South Pacific Fishery Investigations contributed to this project, many devoting their full time to it. David Kramer, Robert Counts and James Thrailkill aided in the identifications, enumerations, and measurements included in this report.

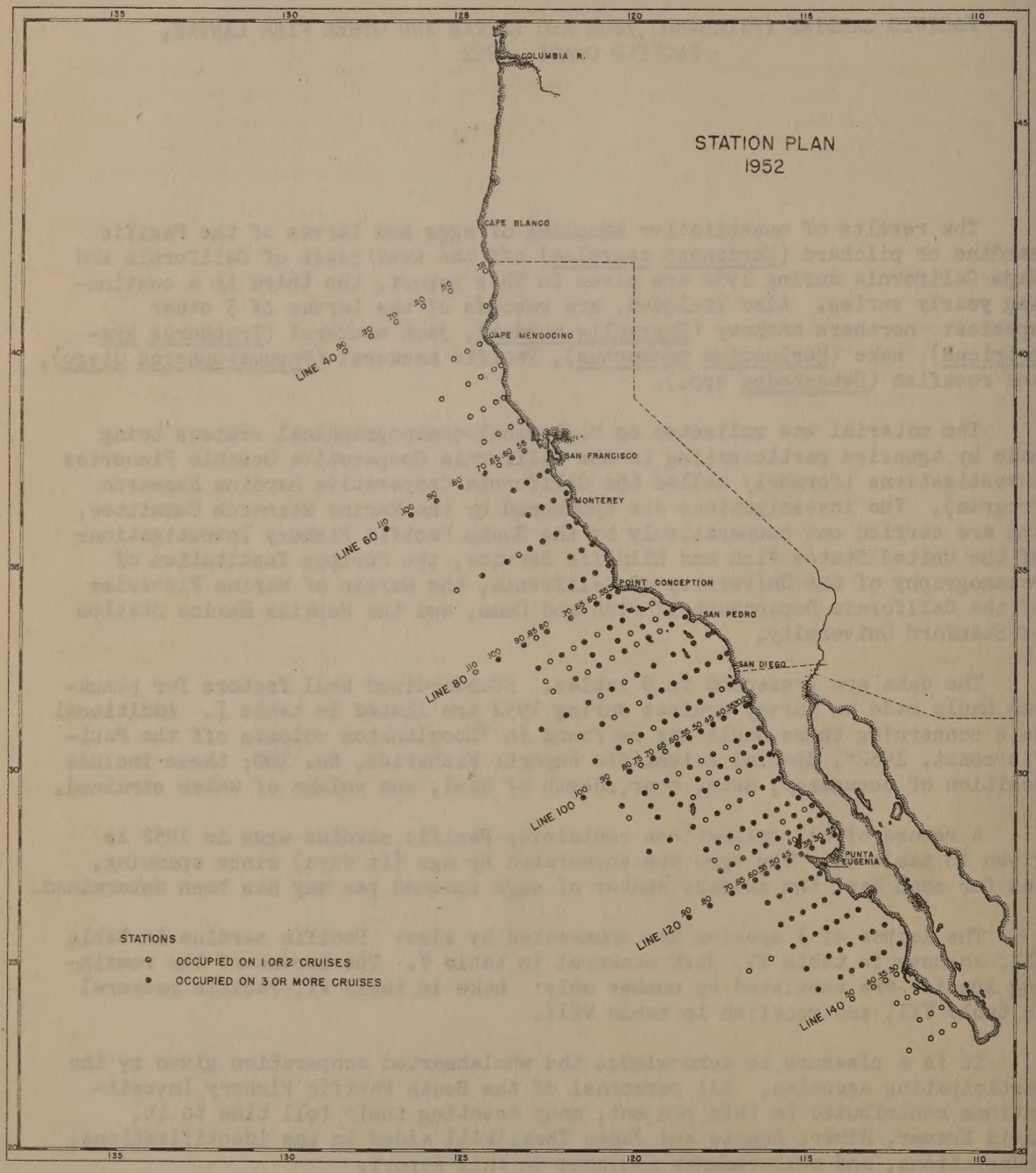

Figure 1.- Station plan, showing location of all stations occupied on routine survey cruises of the California Cooperative Oceanic Fisheries Investigations during 1952.

AREA COVERED

The stations occupied during 1952 are shown in figure 1. Stations occupied on only 1 or 2 cruises are shown as open circles; stations occupied on 3 or more cruises are indicated by black dots. Survey cruises were made monthly in 1952, except in December. The stations occupied on each cruise made during the year can be determined from table I (Record of standardized haul factors).

Coverage during 1952 is summarized by area in text table 1. The coverage varied in intensity on different cruises, being most intense in the sardine spawning areas during the main spawning season (March through June). The coverage north of Point Conception (station lines 40-77) was not as thorough as in 1950 or 1951. The coverage between Point Conception and Point San Juanico (station lines 80-137) was more intensive than during any previous season. The area off southern Baja California was visited only once (February). A comparison of coverage in different parts of the survey area in 1950, 1951 and 1952 is given in text table 2.

Text table 1.- Coverage during 1952, summarized by month and area

Month	Cruise number		Area north of Pt. Conception (station lines 77 and above)	So. Calif. and adj. Baja Calif. (80-107)	Central Baja Calif. (110-137)	Southern Baja Calif. (140 & below)	Total all areas
January	33 1/	5201 2/	0	47	47	0	94
February	34	5202	0	47	48	14	109
March	35	5203	0	45	46	0	91
Late March	35	5203	0	0	63	0	63
April	36	5204	18	68	72 3/	0	158
May	37	5205	23	93	71	0	187
June	38	5206	34	116 3/	72	0	222
July	39	5207	46	70	63	0	179
August	40	5208	15	39	45 3/	0	99
September	41	5209	21	39	34	0	94
October	42	5210	18	36	34	0	88
November	43	5211	18	38	35	0	91
December	-	-					-
Total			193	638	630	14	1475

1/ Cruises numbered in order since beginning of research program in 1949.
2/ Revised numbering system for cruises. First two digits indicate year; the last two indicate month during which cruise took place.
3/ Includes extra occupancies listed in supplement to table I.

Text table 2.- Comparison of intensity of coverage in different parts of the survey area in 1950, 1951 and 1952.

	Number of stations occupied		
	1950	1951	1952
North of Point Conception (20) (40-77)	376	288	193
Southern California and adjacent Baja California (80-107)	358	597	638
Central Baja California (110-137)	230	466	630
Southern Baja California (140-157)	0	89	14
Total	964	1440	1475

Seven vessels participated in one or more cruises. These were the Spencer F. Baird, Crest, Horizon, Paolina T. and E. W. Scripps of the Scripps Institution of Oceanography, the Yellowfin of the California Department of Fish and Game, and the Black Douglas of the U. S. Fish and Wildlife Service. The vessels taking part in each of the 11 monthly survey cruises in 1952 are listed in text table 3.

Text table 3.- Research vessels participating in the collection of material during 1952.

Month	Cruise number	Number vessels used	S.F. BAIRD	BLACK DOUGLAS	CREST	HORIZON	PAOLINA T.	E.W. SCRIPPS	YELLOWFIN
January	33	3		X	X	X			
February	34	3		X	X	X			
March	35	2			X	X			
Late March	35	1		X					
April	36	3		X	X	X			
May	37	4	X	X			X	X	
June	38	4	X	X	X				X
July	39	3	X		X		X		
August	40	3	X	X	X				
September	41	2			X		X		
October	42	2			X		X		
November	43	2		X	X				

METHODS OF SAMPLING

Plankton samples were obtained by obliquely hauling a conical net, 1.0 meter in diameter at the mouth, from approximately 140 meters deep to the surface, except at shallow stations. The nets were constructed of No. 30xxx grit gauze. The depth range fished by the net during each haul is given in column 8 of the extended table in Special Scientific Report: Fisheries, No. 100. The hauls were made at a vessel speed of about 1-1/2 to 2 knots. The water entering the net during a haul was measured by a current meter fastened in the mouth of the net. The volume of water strained while taking each haul in 1952 is listed in column 7 of the table referred to immediately above. The methods of deriving volume of water strained during a haul from current meter readings, and of standardizing hauls for comparability are discussed in a preceding report (Ahlstrom 1953: 4-6).

SEPARATION OF FISH EGGS AND LARVAE FROM PLANKTON SAMPLES

Plankton hauls obtained on the 11 survey cruises made during 1952 totaled 1475. In working up the samples in the laboratory, the volumes of plankton were first determined (cf., "Zooplankton volumes off the Pacific coast, 1952", Special Scientific Report: Fisheries, No. 100), the larger samples were fractioned into aliquot portions (2, 4, 8 or 16), and the samples or aliquots were examined under a low power binocular microscope in order to separate fish eggs and larvae from other plankton organisms. Approximately 1/6th of the samples were fractioned into aliquot portions before examining; the remaining 5/6ths were examined in entirety. A single aliquot portion was sorted of each fractioned sample. Information, by cruise, on the number of samples examined in entirety and those which were fractioned, is given in text table 4.

Text table 4.- Laboratory examination of the 1952 plankton samples.

	Percent examined					No. samples
	6.25	12.5	25	50	100	examined
Cruise 33				7	87	94
Cruise 34		1	2	4	102	109
Cruise 35			1	10	80	91
Cruise 35 (Late)			1	2	60	63
Cruise 36			5	11	142	158
Cruise 37	1	1	6	22	157	187
Cruise 38	1		15	34	172	222
Cruise 39		3	12	43	121	179
Cruise 40		2	6	17	74	99
Cruise 41	1	3	3	9	78	94
Cruise 42			1	11	76	88
Cruise 43				1	90	91
Total	3	10	52	171	1239	1475

GUIDE TO TABLES

Table I. Standardized Haul Factors (S. Factors). Adjusts each haul to the comparable standard of 10 cubic meters of water strained per meter of depth fished (see Ahlstrom 1953: 4-6).

* . . . An asterisk following an S. factor indicates that one or more additional occupancies of the station were made during the cruise. The additional S. factors for these hauls are given in a supplement to table I.

\- . . . A dash indicates that the station was not occupied during the cruise under which it appears.

NQ . . Haul not quantitative.

Table II. Record of Sardine Eggs, 1952.

Number of normal eggs. . . Number of normally developing sardine eggs.

Total number of eggs . . . Includes all sardine eggs taken in a sample, whether normal or abnormal. Sardine eggs were classified as abnormal when the embryos were stunted and misshapen. It is not known whether such abnormalities are caused by a diseased condition of the eggs, by mechanical injury during collection, or by other means.

The letters A through D are used to designate age categories of eggs:

A . . . Eggs spawned within 24 hours of collection.
B . . . Eggs spawned within 24.1 to 48 hours of collection.
C . . . Eggs spawned within 48.1 to 72 hours of collection.
D . . . Eggs spawned within 72.1 to 96 hours of collection.
Uncl. . Unclassified eggs. Deteriorating eggs that could not be classified with certainty.

* . . . Explained under Ave. n'.

n . . . Total number of eggs in sample.

Ave. n'. . . Average number of eggs spawned per day. Because of incomplete age categories resulting from hauls having been taken while spawning or hatching was actively taking place, not all age categories were used in determining n', but only those followed by an asterisk.

Table III. Record of Sardine Larvae, 1952.

Midpoint of size classes. . . The larvae are grouped into size classes which have the following midpoints and ranges:

Midpoint (in mm.)	Range (in mm.)	Midpoint (in mm.)	Range (in mm.)
3.25	2.26-4.25	12.75	12.26-13.25
4.75	4.26-5.25	13.75	13.26-14.25
5.75	5.26-6.25	14.75	14.26-15.25
6.75	6.26-7.25	15.75	15.26-16.25
7.75	7.26-8.25	17.25	16.26-18.25
8.75	8.26-9.25	19.25	18.26-20.25
9.75	9.26-10.25	21.25	20.26-22.25
10.75	10.26-11.25	23.25	22.26-24.25
11.75	11.26-12.25		

Table IV. Record of Anchovy Larvae, 1952.

Same as above, except for the first category. The size class with midpoint of 3.0 mm. contains larvae from 1.76 to 4.25 mm. in length.

Table V. Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952.

Midpoint of size classes. . . The larvae are grouped into size classes which have the following midpoints and ranges:

Midpoint (in mm.)	Range (in mm.)	Midpoint (in mm.)	Range (in mm.)
2.00	1.76-2.25	7.75	7.26-8.25
2.50	2.26-2.75	8.75	8.26-9.25
3.00	2.76-3.25	9.75	9.26-10.25
3.50	3.26-3.75	10.75	10.26-11.25
4.00	3.76-4.25	11.75	11.26-12.25
4.50	4.26-4.75	12.75	12.26-13.25
5.00	4.76-5.25	13.75	13.26-14.25
5.75	5.26-6.25	14.75	14.26-15.25
6.75	6.26-7.25	15.26 and larger	

Table VI. Record of the Larvae of Hake (Merluccius productus), 1952.

The standardized number of larvae are listed by station for all cruises on which they were taken during 1952. A dash indicates that the station was not occupied.

Table VII. Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1952.

The comments under table VI are applicable here as well. No larvae were taken north of line 90, hence table starts with this line.

Table VIII. Record of the Larvae of Rockfish (Sebastodes spp.), 1952.

The comments under table VI are applicable here as well.

Table I

Record of Standardized Haul Factors for Oblique Hauls made with Plankton Nets during Cruises 33-43 in 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
40.38	-	-	-	-	-	-	-	2.35	-	-	-	-
40.50	-	-	-	-	-	-	-	4.39	-	-	-	-
40.60	-	-	-	-	-	-	-	2.68	-	-	-	-
40.70	-	-	-	-	-	-	-	2.97	-	-	-	-
40.80	-	-	-	-	-	-	-	3.18	-	-	-	-
40.90	-	-	-	-	-	-	-	3.08	-	-	-	-
43.42	-	-	-	-	-	-	-	3.22	-	-	-	-
43.50	-	-	-	-	-	-	-	NQ	-	-	-	-
47.50	-	-	-	-	-	-	-	2.76	-	-	-	-
47.55	-	-	-	-	-	-	-	3.37	-	-	-	-
47.60	-	-	-	-	-	-	-	4.86	-	-	-	-
50.47	-	-	-	-	-	-	-	1.37	-	-	-	-
50.50	-	-	-	-	-	-	2.09	2.42	-	-	-	-
50.55	-	-	-	-	-	-	-	3.08	-	-	-	-
50.60	-	-	-	-	-	-	-	2.58	-	-	-	-
50.70	-	-	-	-	-	-	-	2.93	-	-	-	-
53.52	-	-	-	-	-	-	1.71	-	-	-	-	-
53.55	-	-	-	-	-	-	1.91	2.97	-	-	-	-
53.60	-	-	-	-	-	-	-	2.89	-	-	-	-
53.65	-	-	-	-	-	-	3.52	2.94	-	-	-	-
57.51	-	-	-	-	-	-	2.58	1.49	-	-	-	-
57.55	-	-	-	-	-	-	1.11	2.21	-	-	-	-
57.60	-	-	-	-	-	-	-	2.30	-	-	-	-
57.65	-	-	-	-	-	-	2.00	3.01	-	-	-	-
60.55	-	-	-	-	1.22	-	1.96	NQ	2.99	1.62	2.16	2.07
60.57	-	-	-	-	-	-	-	3.21	-	-	-	-
60.60	-	-	-	-	1.98	-	2.94	3.64	-	2.49	2.47	3.00
60.65	-	-	-	-	-	-	3.05	NQ	-	-	-	-
60.70	-	-	-	-	2.94	-	2.92	2.32	-	1.96	2.48	2.92
60.80	-	-	-	-	1.68	2.77	NQ	-	-	1.62	2.77	2.76
60.90	-	-	-	-	2.18	2.91	2.83	3.02	-	2.96	2.40	2.99
60.100	-	-	-	-	-	2.85	3.21	-	-	2.22	2.78	2.48
60.110	-	-	-	-	-	-	-	-	-	2.51	2.49	2.86
63.52	-	-	-	-	0.90	2.09	1.72	2.07	2.59	1.10	2.41	2.34
63.55	-	-	-	-	2.04	3.05	2.65	3.07	3.29	1.51	2.78	2.68
63.60	-	-	-	-	-	2.66	2.90	3.67	-	-	-	-
63.65	-	-	-	-	-	2.23	2.83	2.64	-	-	-	-
67.50	-	-	-	-	1.47	2.47	1.77	NQ	2.92	1.57	-	2.15
67.55	-	-	-	-	3.01	3.13	2.70	4.30	3.09	2.23	3.49	2.63
67.60	-	-	-	-	-	-	3.82	3.19	-	-	-	-
67.65	-	-	-	-	-	-	3.59	2.79	3.29	2.09	3.08	2.67

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls made with Plankton Nets during Cruises 33-43 in 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
70.51	-	-	-	-	-	-	-	4.68	2.74	1.04	-	2.53
70.55	-	-	-	-	2.73	2.82	2.06	-	-	-	-	-
70.60	-	-	-	-	2.86	2.89	3.18	3.43	2.96	2.41	2.92	2.66
70.65	-	-	-	-	-	2.84	2.81	2.90	-	-	-	-
70.70	-	-	-	-	2.21	2.96	3.14	3.89	3.15	2.40	2.91	2.81
70.75	-	-	-	-	-	-	3.11	-	-	-	-	-
70.80	-	-	-	-	2.46	2.48	3.19	3.10	2.62	2.61	3.06	2.74
70.90	-	-	-	-	2.09	2.79	2.62	3.24	-	-	-	-
70.100	-	-	-	-	-	2.94	2.69	-	-	-	-	-
73.50	-	-	-	-	1.21	2.52	1.79	1.15	2.60	1.26	(2.75)	-
73.55	-	-	-	-	-	2.86	2.92	2.49	-	-	-	-
73.60	-	-	-	-	2.68	2.97	NQ	2.53	2.85	2.35	3.12	-
77.50	-	-	-	-	1.50	2.70	2.07	2.70	2.58	1.32	-	-
77.55	-	-	-	-	2.38	2.99	3.21	3.06	3.10	3.15	3.25	2.88
77,60	-	-	-	-	-	2.91	3.04	3.41	-	-	-	-
77.65	-	-	-	-	-	3.18	NQ	3.30	3.14	3.25	3.18	2.70
80.51	1.38	1.30	1.86	-	1.42	2.48	1.69	1.95	2.91	1.26	3.48	1.72
80.55	2.57	2.48	2.52	-	2.65	2.77	2.71	3.70	2.88	3.07	3.04	2.73
80.60	2.50	2.78	2.11	-	2.81	2.39	2.89	3.48	3.29	3.56	2.58	2.66
80.65	-	-	-	-	-	-	3.19	2.54	-	-	-	-
80.70	2.92	2.56	2.44	-	2.74	2.60	2.91	2.92	2.95	2.85	2.83	2.66
80.75	-	-	-	-	-	-	NQ	-	-	-	-	-
80.80	2.60	2.88	2.69	-	2.37	2.46	2.52	3.34	2.85	3.05	2.48	2.86
80.85	-	-	-	-	-	2.87	-	-	-	-	-	-
80.90	2.60	2.25	NQ	-	2.82	2.66	2.65	1.87	3.06	3.04	3.07	2.80
80.100	2.60	2.78	-	-	2.63	2.69	2.82	3.24	2.69	3.09	3.21	3.01
80.110	2.42	-	-	-	-	-	-	-	-	-	-	-
83.43	-	-	-	-	-	2.68	2.41	-	-	-	-	-
83.55	-	-	-	-	2.52	3.16	2.51	-	-	-	-	-
83.60	-	-	-	-	2.86	2.58	1.76	-	-	-	-	-
83.65	-	-	-	-	-	2.79	-	-	-	-	-	-
83.70	-	-	-	-	2.14	2.91	2.94	-	-	-	-	-
83.75	-	-	-	-	-	2.91	2.62	-	-	-	-	-
83.80	-	-	-	-	2.40	2.74	2.12	-	-	-	-	-
83.85	-	-	-	-	-	2.70	-	-	-	-	-	-
83.90	-	-	-	-	2.17	2.79	2.76	-	-	-	-	-
85.38	1.12	1.52	1.60	-	-	-	-	2.41	2.82	1.12	1.95	2.56
85.40	2.53	2.48	2.20	-	-	-	-	2.63	2.62	2.69	3.38	2.54
85.45	-	-	-	-	-	-	-	2.92	-	-	-	-
85.50	2.71	1.87	1.71	-	-	-	-	2.58	3.10	2.33	3.26	2.59
85.55	-	-	-	-	-	-	-	3.21	-	-	-	-

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls made with Plankton Nets during Cruises 33-43 in 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
85.60	2.66	3.15	2.07	-	-	-	-	3.00	2.84	2.82	2.99	2.93
85.70	2.60	2.27	2.41	-	-	-	-	2.72	-	-	-	-
85.80	-	-	-	-	-	-	-	2.56	-	-	-	-
85.90	-	-	-	-	-	-	-	3.24	-	-	-	-
87.35	-	-	-	-	1.90	2.95	1.95*	-	-	-	-	-
87.40	-	-	-	-	2.34	3.07	2.41	-	-	-	-	-
87.45	-	-	-	-	-	3.02	2.42	-	-	-	-	-
87.50	-	-	-	-	1.36	1.59	1.62	-	-	-	-	-
87.55	-	-	-	-	-	3.10	2.72	-	-	-	-	-
87.60	-	-	-	-	2.90	3.43	3.30	-	-	-	-	-
87.65	-	-	-	-	-	3.07	-	-	-	-	-	-
87.70	-	-	-	-	2.87	4.34	5.60	-	-	-	-	-
87.75	-	-	-	-	-	2.89	-	-	-	-	-	-
87.80	-	-	-	-	3.21	2.47	2.88	-	-	-	-	-
87.90	-	-	-	-	2.58	-	-	-	-	-	-	-
90.28	2.26	2.79	1.46	-	3.10	2.55	1.19*	2.86	2.40	2.32	2.97	2.37
90.30	2.42	2.58	2.39	-	2.45	2.18	1.90*	3.07	2.84	2.56	3.54	2.67
90.37	2.46	2.88	2.69	-	2.58	3.15	2.73*	2.68	2.73	2.75	-	2.74
90.45	2.40	2.69	2.84	-	3.31	2.35	3.35*	3.08	2.90	2.36	3.41	2.98
90.53	2.32	3.00	3.38	-	3.89	2.92	3.03*	3.02	2.89	2.87	2.97	2.79
90.60	2.35	2.49	2.82	-	3.09	2.73	3.68*	2.71	2.85	2.99	2.28	2.62
90.65	-	-	-	-	-	3.05	3.36	-	-	-	-	-
90.70	2.46	2.81	2.83	-	3.00	(3.11)	3.16	2.55	2.73	2.68	2.74	2.74
90.75	-	-	-	-	-	2.97	-	-	-	-	-	-
90.80	2.47	3.10	2.65	-	2.63	2.39	2.85	3.15	-	-	-	-
90.90	2.84	2.66	2.74	-	2.50	2.63	2.86	2.95	-	-	-	-
90.100	-	-	-	-	2.93	-	2.75	2.86	-	-	-	-
93.27	2.11	1.39	1.86	-	2.40	2.59	2.63	2.76	2.56	0.81	2.82	2.95
93.30	1.96	2.07	2.50	-	2.95	3.20	3.14*	2.78	2.35	2.25	2.27	2.80
93.35	-	-	-	-	-	3.27	3.22	3.14	-	-	-	-
93.40	2.40	2.41	2.38	-	3.09	3.36	3.51*	2.86	2.60	3.03	2.63	2.31
93.45	-	-	-	-	-	3.24	3.53	2.31	-	-	-	-
93.50	2.34	2.88	2.61	-	3.12	3.17	3.78*	2.58	2.75	2.53	3.32	2.64
93.55	-	-	-	-	-	2.90	3.50	3.02	-	-	-	-
93.60	2.63	2.74	2.78	-	2.77	3.27	3.67*	2.75	-	-	-	-
93.65	-	-	-	-	-	3.26	3.26	-	-	-	-	-
93.70	2.56	3.34	2.85	-	3.04	2.99	3.52	3.09	-	-	-	-
93.75	-	-	-	-	-	3.20	-	-	-	-	-	-
93.80	-	-	-	-	3.74	3.19	3.81	2.82	-	-	-	-
93.90	-	-	-	-	3.07	-	-	2.92	-	-	-	-

* - An additional haul was made at this station. See supplement to Table 1.

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls made with Plankton Nets during Cruises 33-43 in 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
97.30	1.28	1.07	1.70	-	-	1.66	1.93*	1.95	1.69	0.99	-	1.61
97.32	2.41	2.62	2.84	-	2.84	-	3.04	3.42	2.53	2.04	3.18	2.42
97.35	-	-	-	-	-	3.68	2.83	-	-	-	-	-
97.40	3.03	2.93	2.60	-	2.88	3.15	3.07*	3.05	2.86	1.90	3.19	2.39
97.45	-	-	-	-	-	2.68	2.93	2.96	-	-	-	-
97.50	2.56	3.17	2.67	-	2.97	2.86	3.34*	3.27	2.76	2.85	2.95	2.30
97.55	-	-	-	-	-	3.49	3.06	2.68	-	-	-	-
97.60	2.30	1.88	2.94	-	3.29	4.14	3.26*	2.62	-	-	-	-
97.65	-	-	-	-	-	3.98	3.14	-	-	-	-	-
97.70	2.58	2.87	4.10	-	2.85	3.82	3.19	3.18	-	-	-	-
97.75	-	-	-	-	-	2.88	-	-	-	-	-	-
97.80	-	-	-	-	2.84	3.65	3.03	2.28	-	-	-	-
97.90	-	-	-	-	3.29	2.82	3.34	2.93	-	-	-	-
100.29	1.24	-	1.48	-	1.76	1.76	1.82*	3.20	2.27	2.37	3.89	1.26
100.30	-	2.28	2.81	-	2.68	2.37	4.60*	2.85	2.72	2.12	2.80	2.16
100.35	-	-	-	-	-	-	2.75*	3.13	-	-	-	-
100.40	3.23	2.71	2.72	-	3.81	2.54	4.57*	3.33	2.32	2.97	2.13	1.81
100.45	-	-	-	-	-	2.36	3.53	2.74	-	-	-	-
100.50	(0.94)	2.51	3.04	-	3.25	2.28	3.22*	2.72	2.50	3.09	3.15	2.76
100.55	-	-	-	-	-	3.48	3.31	3.32	-	-	-	-
100.60	-	2.41	2.02	-	3.20	2.98	3.04*	2.99	3.11	2.83	2.95	3.19
100.65	-	-	-	-	-	4.85	3.72	-	-	-	-	-
100.70	1.58	2.83	2.37	-	3.33	2.58	3.02	3.22	4.04	2.64	3.26	3.01
100.75	-	-	-	-	-	1.94	-	-	-	-	-	-
100.80	1.30	2.82	2.83	-	3.21	2.31	3.47	2.79	2.20	3.22	2.50	1.98
100.90	1.76	2.36	2.67	-	3.16	2.96	3.73	2.69	-	-	-	-
100.100	-	-	-	-	3.28	-	3.32	2.96	-	-	-	-
103.30	-	-	-	-	1.86	1.33	1.59*	-	3.07	2.06	1.87	2.39
103.35	-	-	-	-	3.28	2.85	2.34*	-	2.96	3.44	2.20	2.68
103.40	-	-	-	-	3.18	2.66	2.74	-	2.74	2.85	2.29	2.44
103.45	-	-	-	-	-	2.26	-	-	-	-	-	-
103.50	-	-	-	-	2.97	2.84	2.82	-	-	-	-	-
103.55	-	-	-	-	-	NQ	3.77	-	-	-	-	-
103.60	-	-	-	-	3.15	2.96	2.80	-	-	-	-	-
103.65	-	-	-	-	-	2.66	3.66	-	-	-	-	-
103.70	-	-	-	-	3.18	3.17	3.15	-	-	-	-	-
103.75	-	-	-	-	-	2.40	2.91	-	-	-	-	-
103.80	-	-	-	-	3.30	2.28	3.73	-	-	-	-	-
103.90	-	-	-	-	3.17	2.84	2.48	-	-	-	-	-

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls
made with Plankton Nets during Cruises 33-43 in 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
105.32	1.13	1.40	1.59	-	-	-	-	1.80	-	-	-	-
105.35	2.12	2.76	2.57	-	-	-	-	2.71	-	-	-	-
105.40	2.51	2.86	2.45	-	-	-	-	3.18	-	-	-	-
105.45	-	-	-	-	-	-	-	3.28	-	-	-	-
105.50	2.94	2.44	2.65	-	-	-	-	3.35	-	-	-	-
105.55	-	-	-	-	-	-	-	2.43	-	-	-	-
105.60	2.83	3.06	2.82	-	-	-	-	2.78	-	-	-	-
105.70	2.66	2.72	1.90	-	-	-	-	2.89	-	-	-	-
105.80	2.42	3.05	-	-	-	-	-	2.40	-	-	-	-
105.90	-	-	-	-	-	-	-	3.01	-	-	-	-
107.32	-	-	-	-	3.18	2.13	3.51	-	2.96	2.79	1.95	1.58
107.35	-	-	-	-	2.95	2.16	3.21	-	2.84	2.59	2.69	3.12
107.40	-	-	-	-	3.15	2.46	3.10	-	3.89	3.07	-	-
107.45	-	-	-	-	-	2.20	3.27	-	-	-	-	-
107.50	-	-	-	-	3.59	4.56	3.02	-	-	-	-	-
107.55	-	-	-	-	-	-	3.03	-	-	-	-	-
107.60	-	-	-	-	3.47	2.57	2.97	-	-	-	-	-
107.65	-	-	-	-	-	-	3.59	-	-	-	-	-
107.70	-	-	-	-	3.16	2.65	3.38	-	-	-	-	-
107.80	-	-	-	-	3.07	2.70	2.97	-	-	-	-	-
110.33	1.22	1.38	-	-	2.98	2.00	1.93	2.33	2.26	3.13	2.06	2.02
110.35	2.73	2.58	2.72	-	3.10	3.25	2.73	2.53	3.13	2.70	1.71	2.49
110.40	2.87	2.53	2.92	-	3.32	2.80	3.25	2.49	3.46	3.38	2.20	3.14
110.45	-	-	-	-	-	4.94	2.61	-	-	-	-	-
110.50	2.83	3.07	2.95	-	2.96	3.70	3.62	2.53	3.10	2.85	2.79	2.59
110.55	-	-	-	-	-	-	3.71	-	-	-	-	-
110.60	-	2.72	2.42	-	2.89	2.95	3.24	2.93	3.61	2.93	2.99	2.91
110.65	-	-	-	-	-	-	3.74	-	-	-	-	-
110.70	2.80	3.06	2.68	-	2.95	3.46	3.56	2.26	-	-	-	-
110.80	3.28	2.71	-	-	3.16	3.07	3.10	2.53	-	-	-	-
110.90	2.17	3.18	-	-	3.46	2.72	3.35	2.20	-	-	-	-
113.30	-	1.45	1.33	2.44	1.64	1.61	1.98	1.68	3.14*	2.41	1.34	2.22
113.35	-	2.98	2.66	3.08	3.00	3.17	2.76	2.81	2.57	-	-	3.50
113.40	-	3.00	2.77	2.81	3.41	3.07	3.23	3.08	3.67	3.27	3.36	2.79
113.45	-	-	-	2.93	-	2.53	3.57	2.92	-	-	-	-
113.50	-	2.96	3.06	3.19	-	3.18	3.94	2.62	-	-	-	-
113.55	-	-	-	3.35	-	3.10	3.24	2.54	-	-	-	-
113.60	-	2.80	2.74	2.84	2.82	3.14	3.25	2.65	-	-	-	-
113.65	-	-	-	2.72	2.92	3.28	3.23	-	-	-	-	-
113.70	-	2.74	-	2.95	3.10	3.20	2.93	2.92	-	-	-	-

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls made with Plankton Nets during Cruises 33-43 in 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
115.27	1.54	-	-	-	-	-	-	-	2.08	-	-	-
115.30	-	-	-	-	-	-	-	-	2.48	-	-	-
115.35	2.92	-	-	-	-	-	-	-	2.63	-	-	-
115.40	2.56	-	-	-	-	-	-	-	-	-	-	-
115.50	3.08	-	-	-	-	-	-	-	-	-	-	-
115.60	3.12	-	-	-	-	-	-	-	-	-	-	-
115.70	3.03	-	-	-	-	-	-	-	-	-	-	-
117.26	-	1.54	2.08	2.06	2.78	1.51	1.87	1.76	2.75*	2.80	1.61	3.29
117.30	-	1.45	1.43	2.78	2.78	1.78	1.60	1.85	2.44*	2.53	2.15	2.50
117.35	-	2.55	1.63	3.14	3.00	3.06	3.70	1.65	2.34	-	-	2.26
117.40	-	3.19	2.77	2.94	2.96	2.86	2.95	3.39	3.46*	3.31	2.12	2.57
117.45	-	-	-	2.77	3.13	2.19	3.18	2.46	-	-	-	-
117.50	-	2.95	2.92	3.00	2.88	2.62	3.29	4.43	-	-	-	-
117.55	-	-	-	3.22	3.18	3.61	3.83	4.26	-	-	-	-
117.60	-	2.85	2.70	3.08	3.08	2.62	2.24	3.33	-	-	-	-
117.65	-	-	-	2.70	3.01	3.02	3.14	-	-	-	-	-
117.70	-	2.84	-	2.98	2.85	3.38	3.32	3.24	-	-	-	-
120.25	1.41	1.53	1.56	2.45	2.36	1.92	2.03	2.28	3.91*	1.34	2.36	2.64
120.30	1.64	1.79	1.72	2.60	2.63	1.96	1.82	1.84	2.22	1.97	1.50	1.81
120.35	1.73	2.10	1.48	2.38	2.66	1.51	2.11	1.59	1.82*	2.21	2.34	2.04
120.37	-	-	-	-	-	-	-	0.88	-	-	-	-
120.40	-	-	-	2.31	1.46	1.30	1.89	-	-	-	-	-
120.45	2.60	3.40	3.05	2.81	3.03*	3.25	3.05	2.60	3.71	3.11	2.35	2.30
120.50	3.15	2.92	3.08	3.01	3.05	3.09	2.83	3.21	2.96	3.16	2.54	2.51
120.55	-	-	-	2.90	3.02	2.60	3.12	2.68	-	-	-	-
120.60	3.58	2.57	2.70	2.62	3.12	2.87	3.25	2.11	2.64	3.12	1.98	2.41
120.65	-	-	-	2.95	2.95	2.77	3.27	-	-	-	-	-
120.70	3.18	2.94	2.73	2.82	3.02	3.39	2.68	3.12	3.48	3.71	2.65	3.13
120.80	3.15	2.93	3.77	2.66	3.04	2.34	3.09	3.27	3.36	3.06	2.39	2.42
120.90	3.54	2.83	2.78	2.77	2.95	2.93	2.98	2.08	3.41	3.29	3.05	2.89
123.37	1.53	1.76	1.63	1.78	2.58	1.28	1.52	1.31	2.34	2.45	1.63	1.27
123.40	1.93	2.92	2.77	2.83	3.16*	3.13	3.06	2.75	3.27	3.06	2.21	3.80
123.45	-	-	-	3.05	2.92*	4.10	3.04	2.46	-	-	-	-
123.50	3.08	3.45	2.44	2.92	2.82	2.95	3.15	3.08	3.00	2.57	2.40	2.85
123.55	-	-	-	2.77	2.99	2.60	3.46	-	-	-	-	-
123.60	2.98	2.63	2.56	2.79	2.76	3.10	2.87	3.07	-	-	-	-
127.34	1.52	-	1.62	2.51	2.42	1.47	1.94	1.46	2.22	3.44	1.54	1.26
127.40	3.01	-	2.70	3.06	3.13	3.24	3.21	3.26	2.85	2.92	2.00	-
127.45	-	-	-	2.76	3.32	3.37	2.92	2.88	-	-	-	-
127.50	2.96	-	3.25	3.06	2.95	3.17	2.86	3.33	2.98	3.28	2.45	3.06
127.55	-	-	-	2.96	2.92	2.72	3.12	-	-	-	-	-
127.60	3.09	2.86	3.07	2.77	2.85	3.23	2.88	3.09	-	-	-	-

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls
made with Plankton Nets during Cruises 33-43 in 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
130.30	1.67	1.58	1.58	2.04	2.68	1.41	1.83	1.06	2.56	2.49	1.25	1.58
130.35	1.61	2.87	3.01	2.62	2.73	3.26	3.18	2.66	3.22	2.76	2.36	2.80
130.40	2.97	3.20	2.93	2.98	2.90	2.70	3.51	2.90	2.87	2.92	3.22	1.60
130.45	-	-	-	2.76	3.21	2.71	2.99	2.47	-	-	-	-
130.50	3.03	2.93	3.11	2.75	3.07	2.84	2.94	2.77	3.24	3.56	2.36	2.54
130.55	-	-	-	2.94	2.89	3.17	2.90	-	-	-	-	-
130.60	3.01	2.92	2.49	2.90	2.90	2.86	2.52	2.79	2.81	3.14	2.06	3.02
130.70	2.90	-	-	-	-	-	-	-	-	-	-	-
130.80	3.20	-	-	-	-	-	-	-	-	-	-	-
133.25	1.80	1.50	1.56	2.46	2.40	1.38	2.29	-	1.64	2.27	2.62	2.12
133.30	1.86	2.90	3.14	3.00	2.84	2.50	3.09	2.93	3.15	3.19	1.84	1.99
133.35	-	-	-	2.71	2.93	2.56	2.20	2.29	-	-	-	-
133.40	3.39	2.85	2.69	2.63	2.98	2.66	3.01	2.10	-	-	-	-
133.45	-	-	-	2.70	2.81	2.20	3.06	2.46	-	-	-	-
133.50	3.24	2.71	2.71	1.87	2.67	2.62	NQ	3.03	-	-	-	-
133.60	3.41	-	-	2.72	2.92	-	-	-	-	-	-	-
137.23	1.57	2.57	1.31	2.15	2.32	1.12	1.60	0.90	3.80	1.69	1.70	2.06
137.30	2.29	2.20	2.72	2.69	2.72	2.21	3.69	1.38	3.70	3.12	3.11	3.35
137.35	-	-	-	-	2.63	1.95	2.35	2.23	-	-	-	-
137.40	3.30	2.57	3.11	2.85	2.56	2.49	2.59	2.34	-	-	-	-
137.45	-	-	-	2.76	2.88	2.29	2.79	2.04	-	-	-	-
137.50	2.87	3.29	2.89	-	3.00	2.60	2.96	2.49	-	-	-	-
137.60	3.22	-	-	2.76	2.67	-	-	-	-	-	-	-
140.30	-	2.47	-	-	-	-	-	-	-	-	-	-
140.35	-	2.68	-	-	-	-	-	-	-	-	-	-
140.40	-	3.03	-	-	-	-	-	-	-	-	-	-
140.50	-	2.73	-	-	-	-	-	-	-	-	-	-
143.26	-	1.62	-	-	-	-	-	-	-	-	-	-
143.30	-	2.87	-	-	-	-	-	-	-	-	-	-
143.35	-	2.70	-	-	-	-	-	-	-	-	-	-
147.20	-	1.37	-	-	-	-	-	-	-	-	-	-
147.25	-	4.54	-	-	-	-	-	-	-	-	-	-
147.30	-	2.29	-	-	-	-	-	-	-	-	-	-
150.19	-	2.35	-	-	-	-	-	-	-	-	-	-
150.25	-	2.70	-	-	-	-	-	-	-	-	-	-
150.30	-	2.47	-	-	-	-	-	-	-	-	-	-
150.40	-	2.99	-	-	-	-	-	-	-	-	-	-

Supplement to Table I

On several cruises, some stations were occupied two or more times. A record of standardized haul factors for these additional hauls follows:

Cruise 36		Cruise 38		Cruise 40	
Station	S. Factor	Station	S. Factor	Station	S. Factor
120.45E	2.82	87.35E	2.85	113.30E	2.09
123.40E	3.06	90.28E	2.68	117.26E	2.24
123.45E	2.94	90.30E1	2.50	117.30E	2.41
		90.30E2	2.71	117.40E	2.76
		90.37E1	2.63	120.25E	2.54
		90.37E2	2.68	120.35E	2.36
		90.45E	2.61		
		90.53E	2.91		
		90.60E	2.87		
		93.30E	2.47		
		93.40E	2.96		
		93.50E	2.81		
		93.60E	3.02		
		97.30E	2.68		
		97.40E	3.03		
		97.50E	2.95		
		97.60E	2.79		
		100.29E	2.32		
		100.30E	2.52		
		100.35E	2.97		
		100.40E	3.10		
		100.50E	2.82		
		100.60E	3.00		
		103.30E	2.44		
		103.35E	2.81		

Table II
Record of Sardine Eggs, 1952

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n	Ave. n^1
Cruise 33:											
90.28	0	0	4	-	0*	0*	4	-	0	4	0
110.33	0	1	0	-	0*	5*	0*	-	0	5	2
120.25	20	0	0	-	20	0*	0*	-	40	60	0
120.30	16	131	2	-	16	157*	3	-	30	206	184
120.35	0	55	31	-	0	68*	38	-	2	108	69
123.37	0	178	12	-	0	205*	15	-	18	238	222
123.40	2	0	-	-	2*	0*	-	-	0	2	1
130.30	27	102	-	-	30*	107	-	-	0	137	30
Total	65	467	49	0	68	542	60	0	90	760	508
Cruise 34:											
117.50	3	47	9	-	3*	86*	9*	-	12	110	37
120.25	0	367	55	-	0	724*	119*	-	116	959	480
120.35	0	0	0	-	0*	4*	0	-	8	12	6
120.45	24	0	-	-	279*	0*	-	-	0	279	140
120.50	3	0	26	-	3	0*	26*	-	0	29	13
123.37	30	0	-	-	65*	0*	-	-	0	65	32
130.30	0	0	2	-	0	0*	2*	-	0	2	1
133.25	2	2	-	-	2*	2	-	-	0	4	2
137.23	0	131	-	-	0*	218	-	-	0	218	0
140.30	0	5	-	-	0*	5	-	-	0	5	0
143.26	0	2	-	-	13	8*	-	-	0	21	8
Total	62	554	92	0	365	1047	156	0	136	1704	719
Cruise 35:											
90.28	2	3	0	-	2*	3*	0*	-	0	5	2
90.37	0	14	0	-	0*	22*	0*	-	0	22	7
93.60	0	0	0	8	0	0*	3*	8*	0	11	4
97.30	160	0	0	0	304	0*	0*	0	68	372	0
97.60	0	0	0	6	0	0*	0*	12*	0	12	4
105.50	0	19	37	56	0	19*	40*	58	0	117	30
110.50	6	6	0	-	9	24*	0*	-	9	42	15
113.40	310	1820	357	-	745*	2282*	1227*	-	338	4592	1531
117.26	0	0	0	10	0	0*	0*	15	0	15	0
117.50	6	555	82	-	15*	923*	444*	-	88	1470	490
120.25	66	3	0	-	66*	12*	0	-	0	78	39
120.45	0	0	0	-	0	0*	24*	-	0	24	12
123.37	0	13	0	0	0	18*	0*	0	3	21	10
123.50	0	0	17	-	0	0*	90*	-	0	90	45
127.34	10	478	8	-	18*	674*	80*	-	104	876	292
133.25	0	0	-	-	0*	3*	-	-	0	3	2
Total	560	2911	501	80	1159	3980	1908	93	610	7750	2483

Table II (cont'd)
Record of Sardine Eggs, 1952

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n	Ave. n'
Cruise 35 (Late March):											
120.40	2	25	16	-	2*	42*	21*	-	0	65	22
120.45	20	11	3	-	104*	20*	3*	-	17	144	48
120.50	36	0	0	-	60*	0*	0*	-	3	63	21
120.55	0	0	14	-	0*	0*	35*	-	3	38	13
123.37	0	0	12	0	0	0*	66*	12*	4	82	27
123.40	20	14	14	3	57*	25*	25*	14*	40	161	40
123.45	52	860	244	-	143*	1278*	518*	-	299	2238	746
127.34	0	0	0	22	0	0*	38*	42*	0	80	27
127.40	0	0	196	496	0	0*	615*	1205*	49	1869	623
127.45	0	66	157	-	0*	121*	235*	-	11	367	122
127.50	0	61	355	-	0*	126*	594*	-	12	732	244
127.55	0	0	0	-	0*	0*	9*	-	0	9	3
130.35	0	0	71	-	0*	0*	118*	-	0	118	39
Total	130	1037	1082	521	366	1612	2277	1273	438	5966	1975
Cruise 36:											
87.35	0	25	0	-	0*	42*	0*	-	2	44	15
93.50	0	0	0	6	0	0*	0*	12	3	15	0
93.60	0	0	0	-	11*	0*	0*	-	0	11	4
93.70	0	27	0	0	3*	40*	0*	0	3	46	15
97.50	0	0	0	0	0	3*	0*	0	0	3	2
103.40	0	0	0	-	0	0*	3*	-	0	3	2
113.40	0	167	20	-	0	167*	164*	-	58	389	194
117.26	0	6	28	-	0*	8*	44	-	0	52	4
117.45	25	232	44	-	25	300*	53*	-	44	422	197
117.50	3	0	0	-	3*	0*	0*	-	6	9	3
117.60	0	0	6	-	0*	0*	6	-	0	6	0
120.40	0	3	88	-	0	3*	174*	-	3	180	90
120.45	0	754	870	-	0	960*	1215*	-	61	2236	1118
120.45E	3	3	6	-	3*	6*	17	-	3	29	5
120.50	3	12	6	-	3*	21*	15	-	0	39	12
120.55	840	423	202	-	1613*	667*	396	-	187	2863	1220
120.60	3	19	34	-	22*	47*	175	-	6	250	36
123.37	0	31	16	57	0*	46*	16*	181	0	243	21
123.40	0	28	10	-	0*	38*	16*	-	6	60	20
123.40E	9	0	0	-	31	3*	0*	-	6	40	2
123.45	12	140	418	-	20*	149*	514	-	0	683	84
123.45E	0	109	1246	-	0	124*	1485*	-	0	1609	804
123.50	169	265	28	-	225*	367*	34*	-	68	694	231
127.40	0	0	69	0	0	0*	163*	3	3	169	83
127.45	0	3	80	-	0	3*	249*	-	20	272	136
130.60	0	0	12	-	0*	0*	12	-	0	12	0
Total	1067	2247	3183	63	1959	2994	4751	196	479	10379	4298

Table II (cont'd)
Record of Sardine Eggs, 1952

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n	Ave. n'
Cruise 37:											
90.28	0	204	0	-	0*	581*	0*	-	41	622	207
90.37	0	3	0	-	0*	3*	0	-	0	3	2
93.27	0	3	0	0	0	3*	0*	0*	0	3	1
93.35	0	0	3	-	0	0*	3	-	0	3	0
93.40	3	0	3	-	10	0*	3*	-	0	13	2
93.50	0	54	51	41	0*	120*	104*	89	28	341	81
93.55	0	0	0	-	0*	0*	9*	-	3	12	4
97.40	0	6	0	-	0	10*	0*	-	0	10	5
113.35	54	577	0	-	73*	1246*	19	-	101	1439	708
113.40	0	0	0	-	0	3*	0*	-	3	6	3
117.26	0	0	0	0	0*	0*	0*	2	0	2	0
117.35	0	9	128	-	0*	9*	196	-	0	205	4
117.40	11	0	94	-	26*	0*	146	-	6	178	13
117.45	0	0	13	-	0	0*	24	-	0	24	0
117.50	0	154	102	-	0	309*	493	-	66	868	334
120.25	0	0	4	-	0	0*	4*	-	0	4	2
120.30	0	0	18	-	0	0*	41*	-	0	41	20
120.35	103	36	6	-	622	42*	6	-	220	890	55
120.40	0	5	91	-	0	6*	104*	-	0	110	55
120.45	318	110	494	-	647*	124*	676	-	78	1525	406
120.50	9	28	34	-	12*	40*	49	-	3	104	27
120.55	0	0	0	-	0*	0*	13*	-	8	21	7
123.40	0	69	241	31	0	72*	523*	160*	448	1203	401
123.55	8	3	13	-	23*	13*	21*	-	3	60	20
127.45	0	20	37	17	0	24*	84*	44*	40	192	64
133.50	3	0	-	-	3*	0*	-	-	0	3	2
Total	509	1281	1332	89	1416	2605	2518	295	1048	7882	2423

Table II (cont'd)
Record of Sardine Eggs, 1952

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n	Ave. n'
Cruise 38:											
90.65	0	3	0	-	0*	7*	0*	-	0	7	2
93.50	0	0	38	8	0*	0*	53*	8	0	61	18
97.40E	3	9	-	-	3*	18*	-	-	0	21	10
100.30E	0	0	5	-	0*	0*	5*	-	0	5	2
110.45	0	0	13	-	0	0*	18	-	0	18	0
110.50	0	7	123	-	0	7*	134	-	0	141	7
110.60	0	0	0	-	0*	0*	3	-	0	3	0
113.40	84	191	68	-	97*	229*	74	-	3	403	164
113.50	0	4	0	-	0	4*	0*	-	0	4	2
113.55	0	65	36	-	0	84*	52*	-	10	146	73
117.55	0	448	226	-	0	548*	329*	-	123	1000	500
120.30	74	7	7	-	118	7*	7	-	37	169	8
120.35	0	473	295	-	0	540*	338*	-	152	1030	515
120.40	0	4	-	-	0*	4*	-	-	0	4	2
120.45	15	21	15	-	27*	37*	21*	-	0	85	28
120.50	0	6	8	-	8*	8*	23*	-	0	39	13
120.55	9	16	3	-	28	59*	6	-	28	121	78
123.37	0	0	0	0	0	6*	0*	0*	3	9	3
123.40	0	0	15	12	0	0*	28*	28	3	59	15
127.45	0	6	20	-	0*	14*	41*	-	0	55	18
137.23	922	282	-	-	1315	310*	-	-	51	-1676	320
Total	1107	1542	872	20	1596	1882	1132	36	410	5056	1778
Cruise 39:											
85.40	0	0	5	0	0	0*	5*	0*	0	5	2
90.30	0	3	55	-	0	12*	68	-	12	92	14
113.55	0	0	10	-	0	0*	20	-	0	20	0
117.26	0	0	18	28	0	0*	18*	39	0	57	9
117.30	0	0	0	0	0	0*	0*	4	0	4	0
120.35	693	168	14	-	747*	176*	14	-	5	942	464
120.37	0	33	2	-	0	35*	6	-	6	47	40
123.50	0	9	0	-	0*	12*	3	-	0	15	6
Total	693	213	104	28	747	235	134	43	23	1182	535

Table II (cont'd)
Record of Sardine Eggs, 1952

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n	Ave. n'
Cruise 40:											
90.30	0	0	0	-	0*	0*	3	-	0	3	0
117.26	0	110	8	-	0*	116*	8	-	0	124	58
117.26E	0	0	4	0	0	0*	4*	0*	0	4	1
120.25	0	0	-	-	4*	0*	-	-	0	4	2
120.25E	2	10	-	-	2*	10*	-	-	0	12	6
120.30	0	0	4	-	0	0*	4	-	0	4	0
120.35	404	630	-	-	646	774*	-	-	0	1420	774
120.35E	0	510	-	-	5	677*	-	-	0	682	677
130.30	1137	0	46	-	2319*	0*	62	-	0	2381	1160
130.35	0	0	-	-	0	3*	-	-	0	3	3
Total	1543	1260	62	0	2976	1580	81	0	0	4637	2681
Cruise 41:											
117.26	423	-	-	-	448*	-	-	-	0	448	448
120.25	0	4	4	-	0	9*	13	-	0	22	9
120.30	4	61	-	-	8	65*	-	-	0	73	65
120.35	442	49	-	-	1392	55*	-	-	0	1447	55
123.37	1813	0	-	-	1833*	0	-	-	0	1833	1833
123.40	95	0	-	-	101*	0	-	-	0	101	101
Total	2777	114	4	0	3782	129	13	0	0	3924	2511
Cruise 42:											
123.37	5	18	-	-	5*	18	-	-	0	23	5
127.34	57	-	-	-	74*	-	-	-	0	74	74
Total	62	18	0	0	79	18	0	0	0	97	79
Cruise 43:											
117.26	3	0	-	-	3*	0*	-	-	0	3	2
123.37	0	2	-	-	0	2*	-	-	0	2	2
Total	3	2	0	0	3	2	0	0	0	5	4

Table III
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis. Total
Cruise 33:																		
120.25	1.4					1.4												2.8
120.30	1.6				3.3			1.6										6.5
120.35	95.2	51.9	3.5	1.7	1.7	1.7												155.7
120.45	5.2	5.2	2.6	2.6														15.6
123.37	156.1	3.1																159.2
127.34	1.5	3.0	-	1.5		1.5												7.5
127.40		3.0																3.0
130.30	135.2	126.9																262.1
133.25			3.6	18.0	14.4	12.6	5.4											54.0
133.40		3.4																3.4
137.23				1.6	4.7	3.2	1.6											11.1
137.40					9.9	16.5	6.6	16.5	6.6	19.8	9.9	6.6		6.6				99.0
Total	396.2	196.5	9.7	25.4	34.0	36.9	13.6	18.1	6.6	19.8	9.9	6.6		6.6				779.9
Cruise 34:																		
90.37					2.9													2.9
93.60		2.7	2.7															5.4
110.33	1.4																	1.4
113.30		1.4																1.4
117.35		5.2	45.9	40.8	22.9	25.6	17.9	2.6						2.6				163.5
117.40					9.6	6.4	9.6											25.6
117.50		3.0																3.0
120.25	13.8	1.5																15.3
120.35	6.3																	6.3
120.45		47.6	10.2															57.8
120.50	5.8	5.8	5.8	29.2	20.4	8.8	8.7											84.5
123.40				5.8		5.8	2.9											14.5
130.30	1.6			1.6	4.8													8.0
130.50												8.8	8.8					17.6
133.25		18.0	13.5		1.5		1.5											34.5
137.23	187.5	79.6	18.0	7.7	2.6		5.2											300.6
137.30							4.4	17.6	11.0		4.4	2.2						39.6
137.40												2.6	2.6	2.6				7.8
140.30	9.9	44.5	9.8	2.5														66.7
140.35	2.7	13.4	21.4	24.2	8.0	2.7	2.7											75.1
143.26		1.6	3.2	8.1	4.8		3.2		1.6		1.6		1.6					25.7
147.20	1.4	19.2	189.1	56.1	52.0	50.7	20.6	4.1	1.4	2.7	15.0			1.4	2.7	1.4		417.8
147.25								9.1	4.5									13.6
150.19		2.4	2.4															4.8
Total	230.4	245.9	322.0	176.0	129.5	100.0	76.7	33.4	18.5	2.7	21.0	13.6	13.0	6.6	2.7	1.4		1393.4

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 35:																			
90.53												3.4							3.4
93.60	2.8	2.8							2.8			2.8							11.2
105.50	2.6									2.6	5.3								10.5
113.40	5.6		2.8																8.4
113.50	9.2	91.8																	101.0
117.26	10.4																		10.4
117.35	70.1	107.6						1.6											179.3
117.40	11.1	24.9	5.5																41.5
117.50	55.4	70.0																	125.4
117.60	5.4	2.7	8.1																16.2
120.45		6.0				3.0	6.1												15.1
120.60				5.4		2.7		2.7											10.8
120.80					3.8														3.8
123.37				1.6			1.6												3.2
123.40		2.8	2.8	2.8			2.8			5.6									16.8
123.50	29.3	4.8		2.4						2.4									38.9
127.34	17.8	11.3	4.8	1.6															35.5
127.60									3.1										3.1
130.30					1.6	3.2		1.6	6.3	1.6	3.2	1.6							19.1
130.35				3.0				3.0											6.0
130.60		59.7	97.1	37.4	2.5	5.0	7.5	12.4	22.4	7.5		2.5							254.0
133.25	3.1	6.2	12.5	28.1	56.1	110.7	187.2	255.9	204.3	180.9	92.0	42.2	14.1						1193.3
137.23						1.3		1.3											2.6
137.30									5.4										5.4
Total	222.8	390.6	133.6	82.3	64.0	125.9	205.2	278.5	244.3	200.6	100.5	52.5	14.1						2114.9

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 35 (Late March):																			
113.55	3.4	83.7	77.1	6.7	6.8	3.4			3.4										184.5
117.50		3.0																	3.0
117.55									6.4	3.2									9.6
117.60							3.1	3.1			3.1			3.1					12.4
117.65		8.1	8.1	5.4	18.9	18.9		2.7	2.7	10.8	18.9	5.4							99.9
117.70		3.0						6.0	3.0										12.0
120.40	9.2	2.3																	11.5
120.55	23.2	110.2	8.7																142.1
120.60					2.6	2.6	2.6	2.6		5.2	2.6								18.2
120.65							3.0			3.0	6.0								12.0
120.70				8.5	11.3	11.3	28.2	14.1		2.8									76.2
123.40	14.1	2.8																	16.9
123.45	512.3	799.2	21.3																1332.8
123.50	11.7	5.8																	17.5
127.34	47.7	12.5	7.5	2.5															70.2
127.40	709.9	416.1	48.9	12.2	15.3									12.2				220.3	1434.9
127.45	334.0	436.0	88.3	11.0	5.5	5.5												127.0	1007.3
127.50	91.8	85.6	55.1	6.2														6.1	244.8
127.55		14.8	5.9																20.7
130.35	75.9	7.9	23.6	23.5															130.9
130.50	5.5	16.5	60.5	137.5	5.5				5.5	5.5			5.5						242.0
130.52		26.0	91.0	13.0	15.6	7.8	7.8	2.6	5.2			2.6	5.2	2.6					179.4
130.55		2.9	5.9	5.8	2.9	2.9													20.4
130.60				26.1	17.4	8.7	8.7	8.7		2.9								2.9	75.4
133.25									2.5			2.5							5.0
133.30								3.0											3.0
137.30															2.7				2.7
Total	1838.7	2036.4	501.9	258.4	101.8	61.1	53.4	42.8	28.7	33.4	30.6	10.5	10.7	17.9	2.7			356.3	5379.6

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 36:																			
93.90											3.1								3.1
97.50	3.0	8.9	5.9													3.0			20.8
97.90											3.3								3.3
113.40	3.4	10.2																	13.6
117.40															3.0				3.0
117.45	9.4																		9.4
117.60	3.1																		3.1
120.40	8.8	1.5																	10.3
120.45	136.4	18.2			3.0														157.6
120.45E	290.5	321.5		2.8	2.8														617.6
120.50	76.3	12.2	3.0				6.0			3.0	3.0								103.5
120.55	480.2	256.7	3.0																739.9
120.60	34.2	3.1																	37.3
123.37	5.2	15.5																	20.7
123.40	6.4	6.4																	12.8
123.40E	3.1	64.3	18.3	3.1	6.2														95.0
123.45	43.8	172.3	102.2	5.8	2.9				2.9										329.9
123.45E	720.3	247.0	8.8	5.8		2.9													984.8
123.50	569.6	298.9	45.1	56.4	33.8	5.6	5.6											135.4	1150.4
123.55		6.0	21.0	3.0		3.0													33.0
123.60			2.8					2.8											5.6
127.34				4.8	7.2	2.4													14.4
127.40	9.4	53.2	28.2	47.0	190.9	97.0	59.5	21.9	12.5	9.4			3.1						532.1
127.45			3.3	36.6	126.1	46.5	26.5	33.2	19.9	23.2	6.6	9.9	3.3						335.1
127.50									3.0	3.0									6.0
127.55		5.8	2.9																8.7
130.35		2.7	2.7	11.0	10.9	2.7	2.7												32.7
130.40				5.8	2.9						2.9						2.9*		14.5
130.45					3.2			3.2	3.2	3.2		3.2	3.2	3.2					22.4
130.50	18.5	21.5	18.4	39.9	138.1	221.0	119.7	52.2	52.2	43.0	43.0	9.2	3.1	9.2		3.1		9.2	801.3
130.55	2.9	17.3	23.1	8.7	5.8	2.9					2.9								63.6
130.60	20.3	139.2	226.2	147.9	52.2	14.5	2.9												603.2
133.25	36.0	110.4	4.8	2.4															153.6
133.30				22.7	22.8	5.7	11.4	11.4			11.4								85.4
133.35			2.9	11.7	32.2	20.5	5.8	8.8	5.9		2.9								90.7
133.40												11.9							11.9
133.45				2.8	2.8	14.0	50.6	33.8	14.0	8.4	2.8	8.4	2.8						140.4
Total	2480.8	1792.8	522.6	418.2	643.8	438.7	290.7	167.3	113.6	93.2	81.9	42.6	15.5	12.4	3.0	6.1	2.9*	144.6	7270.7

* - 27.25 mm. group

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 37:																			
87.50					1.6														1.6
93.35	3.3																		3.3
93.50	22.2																		22.2
93.55	168.2	84.1	20.3	11.6							2.9								287.1
97.35																	3.7		3.7
97.40												9.5							9.5
97.45		5.4	16.1	10.7		10.8	5.4												48.4
97.50			2.9																2.9
100.45															4.7				4.7
103.50						2.8													2.8
107.35	64.8	108.0		4.3		4.3	4.3	4.3											190.0
110.33			8.0	12.0					2.0			4.0							26.0
110.35			13.0	169.0	52.0	6.5				3.2	3.2								246.9
110.40		8.4				5.6	2.8			5.6		2.8				8.4			33.6
113.35	34.9																		34.9
113.45					2.5	2.5													5.0
117.26	1.5	1.5																	3.0
117.35	91.8	33.6																	125.4
117.40	11.5	17.1	22.9																51.5
117.45		2.2												2.2					4.4
117.50	10.5	18.3	13.1	2.6	5.2							2.6							52.3
117.55								3.6											3.6
120.35	3.0	3.0																	6.0
120.45	110.6	269.8	42.3	13.0	6.5		3.2												445.4

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 37 (cont'd):																			
120.50	12.4		3.1																15.5
120.55	7.8	5.2	2.6																15.6
120.60					2.9														2.9
120.65												2.8							2.8
123.37		2.6			2.6														5.2
123.40	75.2	3.1													6.2	6.2		18.8	109.5
123.50		11.8	6.0	3.0															20.8
123.55		2.6																	2.6
123.60										3.1									3.1
127.40		42.2	64.8	3.2	9.7	6.5	3.2	6.4									3.2		139.2
127.45	155.0	94.3	77.5	60.6	30.3	10.1	3.4	6.7			3.4								441.3
127.50				3.2	3.2	3.2													9.6
127.60												6.4							6.4
130.35	6.5	91.3	3.3	3.3	9.8		3.3												117.5
130.40					2.7														2.7
130.45		56.9	29.8	40.6	19.0	13.5	13.5	2.7					2.7					2.7	181.4
130.50		31.3	184.6	119.3	56.8	17.0	14.2					2.8				2.8			428.8
130.55						6.4		6.4	6.4	3.2	6.4	12.7	3.2	3.2	6.3				54.2
130.60						2.9	2.9					2.9							8.7
133.35										2.6	5.1								7.7
133.40					2.7			2.7			2.7								8.1
Total	779.2	892.7	510.3	456.4	207.5	92.1	56.2	32.8	8.4	17.7	23.7	46.5	5.9	5.4	17.2	17.4	6.9	21.5	3197.8

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 38:																			
87.35								4.0	2.0										6.0
90.28						2.4													2.4
90.37E1	47.4	31.5	31.5	15.8	15.8	5.3			5.3										152.6
90.37E2											2.7								2.7
93.40	3.5		3.5																7.0
93.40E					5.9	5.9													11.8
93.50	7.6																		7.6
93.50E															2.8				2.8
97.50								3.3											3.3
97.55															3.1				3.1
97.60E				2.8															2.8
97.60							3.3												3.3
97.65					6.3	3.1													9.4
100.30															9.2				9.2
100.30E				2.5															2.5
100.60E													3.0						3.0
110.40	3.2																		3.2
110.45	5.2	10.4												2.6					18.2
110.50	14.5	278.8	21.7		14.5	14.5	7.2	10.9	14.5				3.6	3.6	3.6				387.4
110.55	18.5					3.7													22.2
113.35		2.8																	2.8
113.40	6.4	51.7																	58.1
113.50			3.9	3.9															7.8
113.55		16.2	13.0	9.7	19.4	29.2	9.7	3.2	3.2	3.2	3.2								110.0
113.60		3.2																	3.2
117.55	214.4	210.7	126.4	15.3	19.2	7.7	3.8	3.8	3.8	7.6	3.8	3.8							620.3
117.65														3.1					3.1
120.30		14.8																	14.8
120.35	118.1	8.4																	126.5
120.40		5.7																	5.7
120.45	27.5	3.0	3.0								3.0								36.5
120.50	76.4	19.8	5.6		2.8	2.8	5.7	2.8	2.8										118.7
120.55	74.9	237.1	134.2	31.2	6.2	9.3	3.1	3.1	6.2	3.1									508.4
123.40	15.3	3.1																	18.4
127.40											3.2					3.2			6.4
127.45	38.0	23.4	8.8	5.8		11.7													87.7
127.50															2.9				2.9
130.45			6.0																6.0
130.55															2.9				2.9
133.40	3.0	9.0	6.0																18.0
137.50							6.0	3.0	5.9	5.9	3.0								23.8
Total	673.9	929.6	363.6	87.0	90.1	95.6	38.8	34.1	43.7	19.8	18.9	3.8	6.6	9.3	24.5	3.2			2442.5

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 39:																			
90.30	6.2					6.1	3.1	6.1											21.5
90.37							2.7												2.7
93.40														2.9					2.9
93.45						4.6													4.6
93.50					5.2	10.3	20.7		10.3	5.2				10.4	15.6	5.2	10.3		93.2
93.55						6.0	18.1	12.0		6.0	6.0	6.0							54.1
97.45												5.9	5.9						11.8
100.50																	2.7		2.7
113.55	5.0	7.6																	12.6
113.60											2.6								2.6
117.26	3.5																		3.5
117.55														8.5	4.3				12.8
120.35							1.6												1.6
120.37		0.9																	0.9
127.50				3.3	3.3	3.3	3.3	3.3											16.5
133.35															2.3				2.3
Total	14.7	8.5		3.3	8.5	30.3	49.5	21.4	10.3	11.2	8.6	11.9	5.9	21.8	22.2	5.2	13.0		246.3
Cruise 40:																			
90.37		2.7																	2.7
120.30	37.8	22.2	4.4	6.7	8.9	4.4	6.6												91.0
120.35	143.8	125.6	10.9	9.1		5.4													294.8
120.35E	26.0	37.8	14.1	9.4	14.2		4.8												106.3
120.50																	3.0		3.0
127.34				4.4	2.2	8.9			8.9					2.2					26.6
130.30	10.2	5.1		5.1	5.1	5.1	5.1			5.1									40.8
137.23						7.6													7.6
Total	217.8	193.4	29.4	34.7	30.4	31.4	16.5		8.9	5.1				2.2			3.0		572.8

Table III (cont'd)
Record of Sardine Larvae, 1952

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 41:																			
85.60									2.8										2.8
100.29									2.4										2.4
113.40		3.3						3.3											6.6
120.25	2.7	1.3																	4.0
120.30	5.9			4.0				2.0											11.9
123.37	9.8		78.4	156.8	117.6	29.4	9.8	19.6			19.6								441.0
123.40		15.3	49.0	94.9	58.2	21.4		6.2		3.1	3.1	36.7	42.9	12.3					343.1
127.34	3.4	10.3								3.4				3.4					20.5
130.30			2.5	2.5						2.5									7.5
137.23				3.4	1.7	3.4	16.8	6.8	10.2	3.4	3.4	3.4	1.7	1.7					55.9
Total	21.8	30.2	129.9	261.6	177.5	54.2	26.6	37.9	15.4	12.4	26.1	40.1	44.6	17.4					895.7
Cruise 42:																			
117.26			1.6		1.6														3.2
117.40			2.1	2.1	2.1									2.1					8.4
120.30	3.0			6.0	9.0	9.0		3.0	3.0	6.0									39.0
120.35		16.4	2.3	2.3	4.6	2.3	4.6	4.6	2.3	2.3									41.7
123.37	1.6		1.6																3.2
123.40					4.4	2.2		4.4	4.4	2.2		2.2		2.2	2.2				24.2
127.50													2.4	2.4		2.4			7.2
130.30								1.2	2.5										3.7
Total	4.6	16.4	7.6	10.4	21.7	13.5	4.6	13.2	12.2	10.5		2.2	2.4	6.7	2.2	2.4			130.6
Cruise 43:																			
110.33				2.0	12.2	4.0	10.1												28.3
113.30		8.8	4.4	6.6															19.8
117.26	3.3																		3.3
117.40									2.6	2.6	5.2	2.6	5.1	5.1					23.2
120.30	3.6	10.9		1.8		1.8													18.1
120.35	8.2	2.0	2.0	4.0				2.0											18.2
123.37										1.3	1.3								2.6
123.40										3.8	7.6			3.8					15.2
127.34		3.8																	3.8
133.25							2.1												2.1
Total	15.1	25.5	6.4	14.4	12.2	5.8	12.2	2.0	2.6	7.7	14.1	2.6	5.1	8.9					134.6

Table IV
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 33:																				
80.51		1.4	6.9	2.8	1.4	2.8	5.5	8.2	6.9	12.4	5.6	8.3	4.2	1.4	2.8					70.6
80.55				10.3	5.1		5.1	5.1	5.1		10.3	5.1		5.1	5.1					56.3
85.38		2.2	7.8	9.0	13.5	10.0	9.0	5.6	2.2	3.4	2.2								1.1	66.0
85.50																			2.7	2.7
85.60					5.3		5.3	5.3	5.3	5.3			5.3		10.6			5.3		47.7
85.70													5.2							5.2
90.30	9.7	24.2	2.4																	36.3
90.37					2.5			2.5		2.5	2.5	2.5								12.5
90.45									2.4											2.4
93.27	4.2	12.6	27.4	2.1																46.3
93.30											2.0									2.0
100.29		2.5					1.2	5.0	6.2	2.5	1.2									18.6
100.50					0.9															0.9
105.32							2.2													2.2
115.27	90.8	272.6	103.2																	466.6
115.50								3.1				6.2	3.1							12.4
120.25	5.6	4.2	29.6	25.4	12.6	2.8	1.4	1.4												83.0
120.30		4.9		4.9	1.6			1.6												13.0
120.35	10.3	34.6	38.1	6.9	3.5															93.4
120.45	2.6	5.2	5.2																	13.0
123.37	36.7	61.2	4.6																	102.5
123.40							1.9													1.9
127.34	53.2	21.3	6.0				3.0		1.5											85.0
127.40			3.0				3.0		3.0	3.0										12.0
130.30	20.0	13.4			1.7	1.7														36.8
130.35	1.6	1.6	1.6	1.6	1.6															8.0
130.40	17.8	17.8	29.7	11.9	5.9															83.1
130.60											3.0									3.0
133.25			5.4	1.8		1.8	3.6													12.6
133.30		1.9					1.9	3.7												7.5
133.40		17.0	57.7	159.4	139.0	10.2														383.3
133.50				3.2		3.2														6.4
137.23			1.6				1.6													3.2
137.40			6.6	19.8	6.6	9.9	3.3	3.3	3.3	3.3										56.1
Total	252.5	498.6	336.8	259.1	201.2	42.4	48.0	44.8	35.9	32.4	26.8	22.1	17.8	6.5	18.5			5.3	3.8	1852.5

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 34:																				
80.51		5.2														5.2				10.4
85.38	70.0	45.6	28.8	22.8	10.7	10.6	1.5			3.0	3.0	4.5	1.5	6.1	3.0	3.0		1.5*		215.6
85.40	5.0			14.9	9.9	9.9	5.0	2.5	5.0	2.5										54.7
85.70																2.3	2.3			4.6
90.28						5.6	8.4	8.4	5.6	2.8			2.8							33.6
90.30				7.8	5.2	7.8	2.6	7.8		7.8										39.0
90.37			11.5	17.3	5.8	2.9	2.9													40.4
93.27	4.2			1.4	1.4															7.0
93.40									2.4	4.8	7.2									14.4
97.30			1.1	1.1	2.1	1.1						1.1							1.1	7.6
100.30		4.6	4.6	9.1	16.0	20.5	22.8	22.8	11.4	13.7	2.3	2.3								130.1
100.40			2.7		5.4	5.4														13.5
105.32	5.6	2.8					4.2													12.6
105.35	129.8	44.1																		173.9
105.40										2.9										2.9
110.33	9.7	4.2	2.8		1.4															18.1
110.35	15.5	36.1																		51.6
110.50							3.1													3.1
113.30	100.2	116.0	110.2	17.4	4.3	1.4	1.4													350.9
113.35	184.7	110.2	6.0	6.0			3.0													309.9
113.40	36.0	138.0																		174.0
113.50		5.9																		5.9
117.26	97.0	26.1	13.9	1.5																138.5
117.30	39.2	76.8	40.6	4.3	2.9		1.4													165.2
117.35			15.3	51.0	45.9	43.4	35.7	10.2	10.2	2.6										214.3
117.40			9.6	16.0	6.4	16.0		3.2												51.2
117.50	17.8	8.8	11.8	32.4	47.2	23.6	6.0	8.9	3.0											159.5
120.25	1.5	1.5			3.1	4.6	1.5	4.6												16.8
120.30	89.5	26.8	10.7	44.8	41.1	16.1	1.8	3.6	3.6											238.0
120.35	283.5	90.3	18.9																	392.7
120.45	873.8	61.2	6.8	3.4						3.4										948.6
120.50			2.9	2.9	2.9															8.7
123.37	24.7	38.7	28.2	19.4	10.5	1.8		1.8												125.1
123.40	75.9	78.9	23.4	32.2		5.8	26.3	29.2	20.4	23.4	2.9		2.9	2.9						324.2
130.30		7.9	6.3	14.2	28.4	20.6	20.5	17.4	11.1	1.6	1.6								1.6	131.2
130.50				2.9			11.7	8.8	11.8	5.9	2.9	2.9			2.9					49.8
130.60						2.9		2.9	5.8											11.6
133.25	13.5	12.0	63.0	145.5	82.5	27.0	9.0													352.5
133.40					2.8															2.8
137.23	213.2	61.7	7.7	5.2	7.7	2.6		2.6												300.7
137.30				4.4	8.8	8.8	8.8	8.8	2.2											41.8
137.40						2.6					2.6									5.2
140.30	12.4	14.8	7.4	2.5																37.1
140.35		2.7	2.7																	5.4
Total	2302.7	1020.9	436.9	480.4	352.4	241.0	177.6	143.5	92.5	74.4	22.5	10.8	7.2	9.0	5.9	10.5	2.3	1.5*	2.7	5394.7

* - 1 larva, 25.0 mm.

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 35:																				
85.38	28.8		3.2	6.4	12.8	28.8	6.4	12.8	3.2											102.4
85.40					2.2	4.4	4.4		2.2	8.8	2.2									24.2
90.28	16.1	14.6	1.5	5.9			1.5		1.5											41.1
93.27		5.6	9.3	39.1	33.5	20.4	7.5	3.8	1.9	5.6	3.8									130.5
97.30	1.7	5.1	5.1	8.5	11.9	8.5	6.8	5.1	6.8	3.4	5.1									68.0
97.32					5.6		5.7	2.8	5.6											19.7
100.29			3.0	7.4	7.4	17.7	20.7	10.4	13.4	11.8	5.9	1.5								99.2
100.30			2.8	5.6	11.2	19.6	25.2	19.6	14.0	11.2	14.0									123.2
100.40										5.4	2.7									8.1
100.50				3.0																3.0
105.32						1.6			1.6		1.6			1.6						6.4
105.35		23.1	100.2	72.0	38.6	12.8	2.6		5.2											254.5
105.50	2.6	37.0	18.5	5.3	18.6	7.9	10.6	2.6	5.3	2.6										111.0
105.70				1.9																1.9
110.35					2.7															2.7
110.40				2.9			8.7			2.9	2.9									17.4
110.50			3.0		11.8			3.0												17.8
113.30						2.7	2.7	10.6	8.0	2.7	8.0									34.7
113.35		5.4	8.0	5.4	2.7		8.0													29.5
113.60				2.7																2.7
117.26	108.2	193.4	81.2	43.7	33.3	22.9	20.8	14.5	6.3				2.1							526.4
117.30	1.4	2.9	4.3	32.9	27.1	28.6	28.6	10.1	5.8	1.4	1.4		1.4							145.9
117.35		37.5	88.0	466.1	516.7	479.2	492.2	226.6	176.1	24.4	13.0					1.6				2521.4
117.40		5.5	52.6	185.5	146.8	127.4	66.5	22.2	13.8											620.3
117.50		2.9		2.9																5.8
117.60		10.8	16.2	29.7	24.3	10.8	2.7	5.4		5.4										105.3
120.30		1.7	8.6	49.9	39.6	27.5	8.6	6.8		3.4										146.1
120.35	47.4	81.4	71.0	156.9	75.5	26.6	3.0	1.5												463.3
120.45	48.8	73.2	70.2	82.3	158.6	140.2	149.4	51.9	24.4			3.0								802.0
120.50										3.1										3.1
120.60						2.7														2.7
123.37	3.3	3.3	3.2	13.1	16.3	19.6	14.7	3.2	1.6	1.6	1.6									81.5
123.40		2.8	11.1	36.0	52.7	61.0	49.9	41.5	24.9	24.9	2.8	5.6		2.8	2.8	2.8				321.6
123.50			2.4	2.4	22.0	12.2	12.2		4.9											56.1
127.34	27.5	47.0	11.3	12.9	4.8	3.2	1.6	3.2	3.2	1.6				3.2						119.5
127.40		13.5	10.8	5.4	5.4	5.4	2.7													43.2
130.30			9.5	41.1	99.5	105.8	97.9	104.3	17.4	7.9	7.9	1.6	1.6							494.5
130.35		15.0	78.3	201.6	150.5	81.2	27.0	12.0												565.6
130.40	521.6	43.9	152.4	424.8	354.6	128.9	52.7	26.4	8.8		2.9									1717.0
130.50					3.1		3.1	6.2	3.1											15.5
130.60			12.5	5.0	2.5			5.0	5.0	2.5										32.5
133.25	18.7	40.6	129.5	218.4	290.2	300.8	296.4	255.8	151.4	46.8	20.3		1.6							1770.5
133.30					6.2	12.5	3.1													21.8
137.23					1.3	5.2	5.2	1.3			1.3									14.3
137.30					10.8		5.4				5.4									21.6
Total	826.1	666.2	967.7	2176.7	2200.8	1726.1	1454.5	868.6	515.4	177.4	102.8	11.7	6.7	7.6	2.8	4.4				11715.5

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 35 (Late March):																				
113.35	3.1	3.1							3.1	3.1										12.4
113.40							2.8													2.8
113.45					2.9															2.9
113.50							3.2	12.8	3.2		3.2									22.4
113.55			3.4	6.7	23.5	3.4		3.4	30.1	97.1	43.5	6.8	10.1	3.4						231.4
117.26							6.2		4.1											10.3
117.35	3.1	6.3				3.1														12.5
117.40		2.9	8.8	2.9																14.6
117.50					3.0			3.0	12.0	6.0			6.0							33.0
117.55								12.9	3.2										3.0	16.1
117.60						6.2		6.2				3.1	3.1	3.1	6.2	3.1				31.0
117.65							8.1	5.4												13.5
117.70								3.0		3.0	3.0									9.0
120.25				2.4	2.4	2.4	9.8	7.4	9.8	7.4	2.4									44.0
120.30	5.2	15.6	18.2		13.0	10.4	15.6	28.6	46.8	39.0	7.8	15.6	13.0		26.0	26.0	10.4			292.2
120.35					16.7	23.8	47.6	66.6	73.7	52.4	23.8	19.1	9.5	4.8						338.0
120.40	4.6	4.6				2.3				2.3										13.8
120.45			2.8				2.8													5.6
120.50				3.0																3.0
120.55		5.8	5.8																	11.6
120.60							2.6	2.6												5.2
120.65								3.0			3.0			3.0						9.0
120.70						2.8						2.8			2.8					8.4
123.37				3.6	5.4	3.6			3.6											16.2
123.40	2.8	2.8	5.7	5.7	8.5	8.5		2.8												36.8
123.45		9.2	18.4																	27.6
123.60															2.8					2.8
127.34	52.7	27.6	2.5	5.0	2.5	15.1	10.0	2.5	25.1	20.1			2.5							165.6
127.40		36.7						12.2	36.7	12.2	12.2		24.5		61.2					195.7
127.55	3.0	8.9																		11.9
130.30												2.0		2.0						4.0
130.35	2.6	5.2	7.8		2.6	2.6		2.6												26.0
130.45			2.8	19.3	30.4	11.0	2.8												2.6	66.3
130.50			16.5	27.5	22.0	16.5	16.5	16.5	16.5	22.0	11.0	16.5	22.0	5.5	5.5					214.5
130.52		15.6	26.0	26.0	5.2	33.8	15.6	13.0	13.0				2.6	2.6						156.0
130.55		2.9	5.9	8.8	14.7	20.6	23.5	8.8		2.9	2.9	2.9							2.6	96.8
130.60	2.9	2.9	2.9	5.8	8.7			2.9											2.9	31.9
133.25	4.9	17.2	7.4	5.0	9.8	5.0	14.8	14.8	7.4				9.8	17.2	7.4				5.8	120.7
133.30	24.0			3.0		63.0	72.0	24.0	9.0	9.0		3.0								207.0
133.35										5.4	2.7									8.1
133.40		18.4	55.2																	73.6
137.23					2.2	4.3	6.4	2.2	15.1	21.5	4.4	4.3	10.8	2.2	4.3					77.7
137.30						2.7		2.7	2.7		5.4	10.8		2.7						27.0
137.40		14.2	307.8	302.1	71.2	19.9		2.8											2.8	720.8
Total	108.9	199.9	497.9	426.8	244.7	261.0	260.3	262.7	315.1	303.4	125.3	86.9	113.9	46.5	116.2	29.1	10.4		19.7	3428.7

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		Total
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	
Cruise 36:																				5.0
83.55						2.5							2.5							505.4
87.35	315.4	171.0	13.3	1.9	3.8															9.2
87.40				4.6		2.3	2.3								6.2		3.1			40.3
90.28	6.2	6.2	3.1	3.1	3.1	3.1			3.1		3.1									68.3
90.30						2.4				2.4	2.4			7.3	22.0	9.7	17.2	4.9		15.6
90.37								2.6	2.6	2.6	2.6		5.2							3.3
90.45														3.3						14.4
93.27		4.8	2.4	4.8		2.4														3.1
93.40											3.1									60.0
100.29			7.1	5.3	8.8	17.6	14.1	7.1												40.4
100.30	2.7	2.7		5.4	5.4	5.4	13.4		5.4											22.8
100.40			11.4	3.8	3.8	3.8														136.2
100.50			3.2	13.0	32.4	39.0	9.7	22.7	16.2											120.9
103.30	66.9	22.3		1.9	3.8	3.7	13.0	5.6		3.7									3.3	26.3
103.35					3.3		13.1	3.3	3.3										3.2	140.1
103.40			15.9	12.7	76.3	12.8	9.6	3.2	3.2		3.2									14.9
103.50		3.0		3.0	8.9															130.4
107.32	35.0	54.0	31.8	6.4			3.2													23.8
107.35		6.0		14.8	3.0															6.4
107.40			3.2								3.2									44.8
110.33		6.0	20.9	11.9	3.0										3.0					99.2
110.35		21.7	27.9	3.1	3.1	15.5	21.7	3.1							3.1					109.5
110.40		13.3	9.9	3.3	9.9	43.2	29.9													20.8
110.50				3.0	8.9	8.9														12.0
113.35				3.0			3.0					3.0			3.0					8.4
117.26			5.6	2.8																8.4
117.30					5.6		2.8													6.0
117.35		3.0		3.0																18.0
117.40			3.0	3.0	3.0					3.0	3.0				3.0					3.2
117.55															3.2					

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 36 (cont'd):																				
120.30							2.6		2.6											5.2
120.35			2.7	5.3	13.3	16.0	8.0	2.7		8.0	2.7		2.7							61.4
120.40								1.5												1.5
120.45					3.0	3.0														6.0
120.45E					5.6	8.4	5.6	2.8		5.6										28.0
120.50				3.0	3.0									3.0						9.0
123.37	350.9	20.6			15.5															387.0
123.40				6.3		3.2														9.5
123.40E					3.1	3.1														6.2
123.50		5.6			11.3	11.2														28.1
127.34		7.3	21.7	14.5	12.1	12.1				2.4										70.1
127.40	53.2	187.8	288.0	256.7	150.2	25.0			3.1	3.1										967.1
127.45	13.3	189.2	212.5	358.6	185.9	10.0	3.3	3.3	3.3					3.3				3.3		986.0
127.60				2.8	2.8															5.6
130.30				2.7																2.7
130.35		120.1	68.3		2.7	2.7														193.8
130.40	2.9	5.8	8.7	8.7		2.9	2.9	8.7	11.6	14.5	11.6									78.3
130.45			3.2					6.4				3.2								12.8
130.50		55.3	534.2	141.2	24.5	49.1	40.0	21.5	3.1		3.1	3.1							6.1	881.2
130.55			2.9																	2.9
133.25	1214.4	976.8	264.0	105.6	52.8		28.8													2642.4
133.30		11.4	17.0	5.7	11.4	90.9	28.4	39.7	5.7	11.4				5.7						227.3
133.35				2.9	2.9	14.6	76.2	29.3	29.3	2.9	5.9					2.9				166.9
133.40					11.9	11.9		11.9												35.7
133.45				2.8																2.8
137.35									2.6											2.6
137.40				5.1	23.0	2.6	7.7													38.4
137.45				5.8	11.6	5.8	5.8			11.6	5.8									46.4
137.50							3.0													3.0
Total	2060.9	1893.9	1581.9	1041.5	732.7	435.1	348.1	175.4	95.1	71.2	49.7	9.3	10.4	22.6	43.5	12.6	20.3	8.2	12.6	8625.0

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 37:																				
83.55												3.2				3.2				6.4
83.60										5.2		5.2								10.4
87.35				5.9																5.9
87.50								3.2		1.6										4.8
90.28		2.6	5.2	5.2	5.1	7.7	5.2		5.1	2.6		2.6	2.6							43.9
90.30		2.2	2.2																	4.4
90.37			3.2	3.2	3.2	9.5	9.4		3.2	12.6	3.2	6.3								53.8
90.45										4.7		2.4								7.1
90.53									2.9											2.9
93.27	38.8	25.9	49.2	67.4	31.1	18.2	2.6	2.6							2.6					238.4
93.30	3.2	6.4	12.8	19.2	19.2	9.6		3.2						3.2						76.8
93.35						6.6	13.1	29.4	19.7	6.6		3.3	3.3							82.0
93.40						3.4	3.4	6.7		3.4										16.9
93.50						3.2														3.2
97.30	3.3	13.3	1.7	3.4	16.6	16.6	8.3		1.7	3.3				1.7						69.9
97.35				3.7	3.7	7.4	7.4	14.7	11.1	33.1	11.1		14.8		3.7		3.7			114.4
97.40							3.2	9.5	12.6	25.2	9.5		3.2							63.2
100.29		3.5	3.5	10.6	3.5	3.5	24.6	21.1	21.1	17.6	3.5	3.5	10.6	7.0		3.5				137.1
100.30			14.2	14.2	33.2	56.9	33.1	14.2	28.4	9.4	4.7			.	9.4					217.7
100.40			2.5	2.5	7.6	10.1	5.1	5.0		2.5									2.5	37.8
100.45					9.4		4.7													14.1
100.60					6.0	6.0														12.0
100.65					4.8	4.8														9.6
103.30													10.6	10.6	5.3					26.5
103.35					2.8		2.8													5.6
103.40						2.7	5.3	5.3		2.7	2.7		2.7		2.7					24.1
103.45								2.3		2.3										4.6
103.50							2.8													2.8
107.32							4.3	4.3			12.8	17.0	8.6	8.5	4.3		12.8	4.3		76.9
107.35		4.3	8.6	4.3	4.3	8.6										4.3				34.4
107.45						2.2				2.2										4.4
110.35							3.2			3.2	3.2				3.2		3.2			16.0
110.40				2.8		2.8		2.8	5.6	11.2	8.4	14.0	28.0	28.0	25.2	44.8	19.6	28.0	11.2*	232.4

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 37 (cont'd)																				
113.30			1.6			3.2	1.6													6.4
117.26	19.6	9.0	1.5	4.5	1.5															36.1
117.30	3.6	12.5	5.4	7.1	10.7	1.8														41.1
117.50								2.6												2.6
120.25	65.2	74.9	9.6	11.5	5.7	5.7		5.7	5.7	5.7	1.9									191.6
120.30	54.8	35.2	45.1	135.2	133.2	58.8	5.9	3.9	5.9	2.0										480.0
120.35	18.1	9.0	33.2	117.8	96.6	33.2	15.1	3.0												325.0
120.40	42.9	11.7	13.0	32.5	19.5	10.4	5.2	3.9	2.6											141.7
120.45						3.2														3.2
123.37			5.2	5.1	2.6															12.9
123.40	3.1	9.4	9.4	25.0	34.4	21.9	18.8	3.1	3.1										3.1	131.3
127.34		5.9	2.9	1.5																10.3
127.45	3.4				10.1	13.5	13.5												3.4	43.9
127.50								3.2												3.2
130.40	2.7	10.8																		13.5
133.25	187.7	86.9	22.1	17.9	8.3														11.0	333.9
133.30	10.0	20.0	20.0		20.0	30.0	10.0												10.0	120.0
133.35	2.6			2.6		2.6														7.8
137.23	11.2	1.1																		12.3
137.30			6.6	22.1	11.0	4.4	4.4			2.2									2.2	52.9
Total	470.2	344.6	278.7	525.2	504.1	368.5	213.0	149.7	128.7	159.3	61.0	57.5	84.4	59.0	56.4	55.8	39.3	32.3	32.2 11.2*	3631.1

* - 3 larvae, 24.5 mm.; 1 larva, 25.0 mm.

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 38:																				
80.51	8.4	8.5																		16.9
80.70						5.8														5.8
83.43	2.4	12.0	2.4	4.8																21.6
87.35	103.3	27.3	11.7	17.5	2.0	3.9			2.0											167.7
87.35E					8.6	28.6	25.7	20.0	14.2	11.4		8.5		2.8	2.8					122.6
90.28	7.1		4.8	2.4		14.3	4.8	11.9	7.1	2.4	4.8									59.6
90.28E	32.2	26.8	10.7	21.4	32.1	37.5	5.4	80.4	29.5	29.5	8.0	2.7	8.0		2.7					326.9
90.30										1.9		1.9								3.8
90.30E2						2.7		2.7	2.7											8.1
90.35								3.0												3.0
90.37			5.5	13.6	8.2	8.2														35.5
90.37E1	52.6	78.9	126.2	178.8	105.2	78.9	57.9	26.3	10.5	21.1	15.8		5.3							757.5
90.37E2										2.7										2.7
90.39								3.0												3.0
90.41							3.1				3.1									6.2
93.27				13.1	18.5	50.0	26.3	34.2	10.5	5.2	5.2	5.3	2.6							170.9
93.30					6.3	6.2	9.4	12.5	15.7	6.2	6.3	3.1	6.3	3.1						75.1
93.30E	2.5	9.9		2.5		2.5	2.5	2.5	2.5		2.5									27.4
93.35		9.7						3.2	6.4	3.2	3.2	3.2	6.4		3.2					38.5
93.40								3.5	3.5											7.0
93.50E																	2.8			2.8
97.30						1.9	1.9	1.9												5.7
97.32			3.0	3.0	6.0	9.1	3.0	9.1	6.1	3.0										42.3
100.29E													2.3							2.3
100.30									9.2	9.2						9.2	9.2			36.8
100.30E									2.5											2.5
100.35													2.8	5.6	19.3	8.3	5.6			41.6
100.35E													3.0	3.0	3.0					9.0
100.40E											3.1	3.1	6.2	3.1	3.1	3.1				21.7
100.45																7.1				7.1
100.50											3.2						3.2			6.4
103.35												2.3		2.3	2.3	2.3				9.2
103.35E										14.0	2.8									16.8

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 38 (cont'd)																				
113.30				2.0	2.0															4.0
113.55								3.2												3.2
117.26		11.2	61.8	78.6	35.5	18.7	13.1	1.9												220.8
117.30					1.6			1.6	1.6	1.6										6.4
117.35									3.7										3.7	7.4
117.40		3.0	3.0																	6.0
117.50																		3.3*		3.3
120.25	14.2	24.4	42.6	99.5	105.6	58.9	18.3													363.5
120.30	251.6	44.4	74.0	229.4	429.2	562.4	111.0	22.2	7.4	7.4							7.4		7.4	1753.8
120.35	194.1	371.3	194.1	430.4	489.5	430.4	152.0	33.8	25.3	8.4										2329.3
120.40	117.2	614.2	300.5	81.3	7.6	9.5														1130.3
120.45		6.0	9.1	6.0	6.0	3.0			3.0											33.1
120.55							3.1	3.1	6.2											12.4
123.37		3.0					3.0		6.1											12.1
123.40	3.1	9.2	27.5	18.3	6.1	24.5	30.6	18.3	24.5	12.2	3.1	3.1								180.5
127.34					7.8	85.3	77.6	31.0	15.6	7.8	23.3	7.8		7.8	7.8					271.8
127.40						3.2														3.2
127.45		2.9																		2.9
130.30				14.6	87.9	62.2	40.3	43.9	31.1	11.0	5.5		1.8	1.8	1.8					301.9
130.35	3.2		3.2	3.2	3.2			6.4												19.2
130.45		3.0																		3.0
133.25				4.6																4.6
133.30	500.6	321.4	154.5	30.9																1007.4
133.35		2.2			6.6		2.2													11.0
133.40	27.1	39.1				3.0														69.2
137.23	67.2	92.8	32.0	64.0	41.6	22.4	3.2	3.2												326.4
137.30	2007.4	926.2	273.1	155.0	195.6	155.0	73.8	73.8												3859.9
137.35	2.4																			2.4
137.40		2.6	31.1																	33.7
137.45		2.8		11.2																14.0
Total	3396.6	2652.8	1370.8	1486.1	1612.7	1688.1	668.2	456.6	246.9	158.2	89.9	41.0	44.7	29.5	46.0	30.0	28.2		11.1	14060.7
																		3.3*		

* - 1 larva, 26.0 mm.

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 39:																				
40.60						5.4				5.4										10.8
63.60											7.3									7.3
70.70						7.8														7.8
77.60										6.8										6.8
80.51						2.0														2.0
80.65														10.2						10.2
85.38				2.4		2.4														4.8
85.40												2.6			2.6					5.2
85.45			2.9			5.8						2.9								11.6
85.55								6.4							6.4					12.8
90.28		5.7	5.7	40.1	28.6	17.1	22.8	5.7												125.7
90.30		30.7	24.6	64.5	214.9	288.6	116.7	82.9	67.5	18.5	21.5	3.1	3.1	3.1						939.7
90.37				8.1	50.9	34.8	8.0	18.7	5.4	2.7										128.6
93.60										5.5										5.5
97.30						2.0		2.0												4.0
97.32								6.8	3.4											10.2
97.40							3.0													3.0
110.35																			2.5*	2.5
113.30		13.4	26.9	20.1	16.8	10.1	26.9	6.8			3.4	3.4								127.8
117.26	10.5	10.6	7.0	7.0	14.1	7.0		10.5	21.1	17.6	3.5	3.5	3.5		3.5					119.4
117.35		28.0	11.5	3.2	3.2															45.9
117.40	3.4																			3.4
117.60													3.3							3.3
117.70															3.2					3.2
120.25	43.4	20.5	11.4	41.1	50.2	25.0	22.8	18.2	6.9	2.3										241.8
120.30		29.5	18.4	3.6	5.5	7.4	11.0	1.8	3.6	1.8										82.6
120.35	8.0	58.8	20.7	3.2	4.8	6.4	6.4	4.8		1.6										114.7
120.37	5.3	17.6	8.8	3.6	2.6	0.9	2.7	2.7	3.6											47.8
120.45						20.8		10.4	26.0	10.4	5.2									72.8
123.40								5.5	5.5	5.5				5.5						22.0
123.45									2.5											2.5
123.50				3.1	9.3	9.3	3.1													24.8
127.45				2.9																2.9
127.50					3.3	3.3														6.6
130.30							1.1	6.4	3.2					1.1	1.1	1.1		2.2		16.2
133.30											2.9				2.9					5.8
133.35												2.3								2.3
137.23									21.6	50.4	50.4	64.8	14.4	14.4	14.4					230.4
137.30					1.4	2.8	1.4	12.4	5.6	4.1	6.9	1.4	1.4						5.5	42.9
137.35									2.2	2.2	4.5	2.2								11.1
137.40																			4.7	4.7
Total	70.6	214.8	137.9	202.9	405.6	458.9	225.9	202.0	178.1	134.8	105.6	86.2	25.7	34.3	34.1	1.1		2.2	10.2	2533.4
																			2.5*	

* - 1 larva, 30.0 mm.

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 40:																				
63.55		3.3																		3.3
67.55		3.1	6.2	3.1					3.1		3.1									18.6
67.65			3.3	3.3					6.6											13.2
70.70		25.2	12.6	6.3			6.3	6.3		6.3									6.3	69.3
85.38		22.6	14.1	5.6	2.8	2.8	5.6													53.5
85.40				2.6	2.6	5.2	2.6													13.0
90.28	31.2			4.8		2.4														38.4
90.30	2.8				2.8															5.6
93.27			5.2	5.1	5.1	15.4														30.8
97.30			3.4			6.8														10.2
97.40				5.7	34.3	62.9	80.0	34.3	45.8	5.7				5.7						274.4
100.30						2.7	2.7													5.4
103.30				6.1		6.1	12.3	30.7	6.1	6.1		6.1								73.5
103.35								3.0					3.0							6.0
103.40								5.5												5.5
107.32									3.0											3.0
110.35							3.1													3.1
113.30			6.3						6.3		12.6									25.2
115.26		4.2	22.9	12.4	2.1	2.1			2.1											45.8
115.30		5.0																		5.0
115.35		2.6																		2.6
117.26	44.0	19.3																		63.3
117.26E	4.5	18.0		9.0			9.0		4.5				4.5							49.5
117.30	34.1		2.4																	36.5
117.35		2.3		2.3					7.0											11.6
118.33	3.3																			3.3
118.35	8.9	9.0	20.9	14.9	3.0															56.7
119.33	262.8	131.4	8.8	8.8	26.3	26.3														464.4
119.42	174.5	37.2	25.5	9.8																247.0
120.25	23.4	3.9		3.9																31.2
120.25E	104.2	68.6	17.8	5.1	5.1	5.1														205.9
120.30	2.2		24.4	35.5	39.9	11.1	2.2													115.3
120.35	3.6	18.2	43.7	32.8	9.1	7.2	3.6		3.6	3.6										125.4
120.35E	2.4	26.0	7.1	4.8	14.2	4.7	4.7		2.4											66.3
120.43	17.7	10.1	12.6	2.5	2.5															45.4
120.45																3.7		7.4*		11.1
121.30	372.1	195.2	213.5	140.3	36.6		6.1				6.1									969.9
121.30E	13.7	15.6	4.0	13.7	21.6	4.0	2.0													74.6
121.34	2.0	2.0	6.0	10.0	2.0					2.0	2.0	2.0	2.0							30.0
121.41								1.8												1.8
127.34	13.3		2.2	2.2	2.2															19.9
137.23				7.6	38.0	144.4	22.8	7.6	7.6											228.0
Total	1120.7	622.8	462.9	358.2	250.2	309.2	163.0	89.2	98.1	23.7	23.8	8.1	9.5	5.7		3.7		7.4*	6.3	3562.5

* - 1 larva, 25.0 mm.; 1 larva, 25.5 mm.

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 41:																				
67.50																		1.6		1.6
70.70											2.4									2.4
70.80									2.6	2.6										5.2
77.65							9.7	3.2												12.9
80.55				6.2		3.1	9.2	3.1												21.6
80.60			3.6	7.1	10.7	3.6		3.6					3.6							32.2
80.70						2.8		2.8												5.6
85.38	1.1	2.2		3.4	2.2	6.8		2.2			1.1									19.0
85.40			2.7	10.8	16.2	5.4														35.1
85.50		18.6	32.6	32.6	44.3	32.6	27.9	9.3	4.6	2.3	4.6	2.3								211.7
90.28		6.9	13.9	9.3	7.0	9.3	11.6	2.3	2.3											62.6
90.30	30.7	7.7		10.3	5.2	2.6	5.1							2.6					5.1	69.3
93.27		1.6	1.6	0.8	1.6	3.2	1.6	1.6	2.4											14.4
93.30	2.2	2.2	6.7	11.2	2.2	2.2														26.7
97.30		2.0		1.0	1.0	1.0	2.0	1.0												8.0
97.32		6.1	10.2	10.2	10.2	4.0	6.1	8.1	36.7	26.5	28.6	14.3								161.0
100.29		7.1	2.4		2.4		2.4	2.4		4.8	2.4	4.7								28.6
100.30		8.4	16.9	4.2	4.2	12.7	4.2													50.6
103.30		12.4	12.3	4.1		4.1														32.9
103.35	3.4	6.8		6.9																17.1
103.40										2.8	5.6									8.4
107.32	5.6	5.6	22.3	5.6	5.6															44.7
107.35	2.6				5.2		2.6													10.4
113.30	43.4	82.0	322.9	313.3	404.9	279.5	221.7	106.0	33.7	4.8										1812.2
113.40		3.3	3.3		3.3		22.9	13.1			6.5									52.4
117.26				2.8	5.6	2.8	2.8													14.0
117.30	55.7	73.4	93.7	45.5	10.1	5.1	5.0													288.5
117.40	23.2	9.9																		33.1
120.25	6.7	1.3	1.3	4.0	5.4	6.7	1.3	1.3												28.0
120.30	25.6	51.2	31.5	23.6	23.6	19.7	17.7	4.0	9.8										2.0	208.7
120.35					2.2	2.2	2.2													6.6
120.50								3.2												3.2
120.60							3.1		3.1											6.2
120.70		3.7																		3.7
123.37			29.4	39.2	49.0	39.2	19.6	39.2	19.6	9.8	9.8	9.8								264.6
123.40			6.2	18.3	12.3	39.8	15.3	9.2	3.1		3.1		3.1							110.4
127.34	117.0	3.4	44.7	13.7			6.9													185.7
130.30				2.5																2.5
130.35	2.8																			2.8
137.23	11.9		6.8	5.1	22.0	20.3	11.8	5.1	13.5	5.1	1.7	1.7	3.4	1.7						110.1
Total	331.9	315.8	665.0	591.7	656.4	508.7	412.7	220.7	131.4	58.7	65.8	32.8	10.1	4.3				1.6	7.1	4014.7

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 42:																				
80.55							3.0													3.0
85.38	5.8	2.0	2.0	2.0	5.9	2.0	2.0													21.7
85.40				3.4					3.4	3.4										10.2
85.60																	3.0			3.0
90.28	101.0	6.0																		107.0
93.27	2.8	11.3	2.8	2.8	2.8	2.8	5.6													30.9
93.30			4.6	2.3		2.3	2.3													11.5
97.40				12.8	16.0	3.2				3.2										35.2
97.50			3.0					3.0												6.0
100.29		3.9		3.9			7.8		3.9	3.9		3.9								27.3
100.50		3.2	3.2	15.8		9.5	3.2													34.9
103.40			2.3		4.6						2.3									9.2
107.32	5.9		3.9	3.9		2.0														15.7
110.35							1.7													1.7
110.40					22.0	19.8		2.2												44.0
110.50		2.8																		2.8
113.40	349.4	245.3	131.1	191.5	151.2	255.4	225.1	137.8	30.3	26.9	6.7	3.4								1754.1
117.30				6.5	10.8	23.7	8.6	2.2												51.8
117.40		8.5	4.2	8.4	14.9	21.2	4.2	6.3			6.3	6.3								82.4
120.30					24.0	36.0	12.0	3.0											2.1	75.0
120.35	4.7	2.3	7.0	2.3	2.3	21.0	11.7	9.4												60.7
120.50								2.5												2.5
123.40							2.2	4.4	4.4	2.2										13.2
127.50										2.4										2.4
130.30		1.2	1.2	2.5																4.9
Total	469.6	286.5	165.3	258.1	254.5	398.9	289.4	170.8	42.0	42.0	15.3	13.6					3.0		2.1	2411.1

Table IV (cont'd)
Record of Anchovy Larvae, 1952

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25	Dis.	Total
Cruise 43:																				
80.51	5.2	6.9								1.7										13.8
80.55		5.4	8.2	8.2	2.7			2.7												27.2
85.38	117.8	71.7	35.9	28.1	48.6	30.7	12.8	7.7	2.6	2.6										358.5
85.40		17.8	33.1	27.9	45.7	17.8	20.3	7.6	2.5	2.5		2.5							5.1	182.8
85.50								2.6												2.6
90.28		2.4	14.2	9.4	2.4	2.4		2.4												33.2
90.30	2.7	10.7	13.3	16.0	13.3	8.0	13.4	21.4	2.7											101.5
90.37	2.7			5.4	5.4	2.7	11.0	8.2	5.5										2.7	43.6
93.27	3.0	14.7	17.8	11.8	17.7	3.0														68.0
93.30		8.4	2.8			8.4														19.6
97.40								4.8												4.8
100.29		2.5	2.6				2.6	1.3												9.0
100.30	2.2			6.5	4.4	2.2	6.5													21.8
100.40						1.8		1.8												3.6
103.30	14.4																			14.4
107.32	3.2	4.8	20.6		4.8	3.2	3.2	7.9	6.3		3.2									57.2
107.35	6.2	65.5	40.5	40.6	9.3	15.6	21.8	21.9	3.1	3.1										227.6
110.33	6.0	22.2	28.3	8.0	26.2	18.2	8.1	24.3	14.1										2.0	157.4
110.35		5.0	10.0	2.5	2.5	5.0	2.5	5.0		2.5	5.0									40.0
113.30		8.9	2.2			2.2														13.3
113.35					3.5															3.5
117.26	36.2	9.9			6.6		6.6													59.3
117.30	17.5		2.5		5.0		2.5												2.5	30.0
117.35	106.3	169.5		2.3			2.3	2.3	2.3		2.3									287.3
117.40							2.6													2.6
120.25			2.6		2.6															5.2
120.35		12.2	8.2	2.0	4.1	4.1	2.0													32.6
120.45													2.3		2.3					4.6
123.37											2.5									2.5
Total	323.4	438.5	242.8	168.7	204.8	125.3	118.2	121.9	39.1	12.4	13.0	2.5	2.3		2.3				12.3	1827.5

Table V
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.*	Total
Cruise 33:																				
100.70		1.6																		1.6
Total		1.6																		1.6
Cruise 34:																				
90.60																			2.5	2.5
90.80	3.1	6.2																		9.3
90.90	2.7																			2.7
Total	5.8	6.2																	2.5	14.5
Cruise 35:																				
90.53		3.4	3.4	6.8																13.6
90.70																			19.8	19.8
90.80	13.2	15.9	8.0	23.8	29.2	23.8	8.0	5.3												127.2
90.90	43.8	60.3	49.3	32.9																186.3
93.60				5.6																5.6
93.70	2.8	14.2	11.4			5.7	2.8													36.9
97.40			2.6	2.6																5.2
97.50				8.0																8.0
97.60			8.8	35.3	2.9															47.0
97.70		24.6	20.5					8.2												53.3
100.60	6.1	6.1	2.0	8.1	8.1	4.0														34.4
100.70	4.7	73.5	40.3																	118.5
100.80	2.8																			2.8
100.90		10.7	8.0	66.8	26.7	13.4														125.6
105.40		2.4																		2.4
105.50			2.6																	2.6
105.60		8.5	62.0	81.8	8.5															160.8
105.70			3.8	3.8			1.9													9.5
110.50				3.0	3.0			3.0												9.0
110.60						7.3	12.1	7.3	2.4											29.1
110.70				2.7	2.7	5.4	5.4		2.7											18.9

* - Unclassified. Includes disintegrating larvae and larvae not available for measurement.

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.) 2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 35 (cont'd):																				
113.35																			2.7	2.7
113.40			2.8						2.8											5.6
113.50				18.4	39.8	58.1	12.2	15.3	3.1											146.9
113.60			2.7			2.7	2.7	2.7												10.8
117.60																			2.7	2.7
120.45							3.0													3.0
120.70				5.5		2.7														8.2
120.80				3.8																3.8
127.50					6.5	6.5														13.0
127.60		3.1	3.1																	6.2
130.60				2.5	2.5															5.0
Total	73.4	222.7	231.3	311.4	129.9	129.6	48.1	41.8	11.0										25.2	1224.4
Cruise 35 (Late March):																				
113.35		18.5	21.6	6.2																46.3
113.40		2.8	8.4	2.8																14.0
113.45	5.9	5.9					5.9													17.7
113.50				3.2		3.2	6.4	9.6												22.4
113.55	13.4	23.4	10.0																	46.8
113.60		2.8		2.8		2.8	8.5	17.0	2.8											36.7
113.65						5.4	2.7	10.9												19.0
113.70		8.8	26.6	73.8	8.8				3.0											121.0
117.60														3.1						3.1
117.65	10.8	10.8	16.2	2.7																40.5
117.70		3.0	3.0																	6.0
120.55		2.9																		2.9
120.60		7.9																		7.9
120.65				3.0																3.0
120.70	11.3	42.3		5.6																59.2
120.80	2.7																			2.7
123.45		6.1																		6.1
123.50	2.9	2.9																		5.8
127.34		2.5																		2.5
127.40		12.2																		12.2
127.45	11.0	5.5	8.3																	24.8
127.50	3.1	3.1	3.1																	9.3
Total	61.1	161.4	97.2	100.1	8.8	11.4	23.5	37.5	5.8					3.1						509.9

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 36:																				
83.90								2.2												2.2
87.35			1.9																	1.9
87.80		3.2	3.2	9.6			3.2	6.4												25.6
90.70		3.0	15.0	99.0	198.0	120.0	48.0	6.0												489.0
90.80			13.2	5.3	94.7	23.7	15.8	7.9	2.6											163.2
90.90	5.0	17.5	17.5	37.5	47.5	25.0	22.5	5.0												177.5
90.100		14.6	35.2	35.2	46.9	17.6	14.6	11.7												175.8
93.50					3.1		3.1													6.2
93.60	2.8	5.5	16.6	2.8	24.9	2.8	11.1	5.5												72.0
93.70				3.0			15.2	3.0												21.2
93.80		3.7		22.4	63.6	56.1	71.1	29.9	3.7											250.5
93.90			3.1		12.3	15.4	39.9	39.9	3.1	3.1										116.8
97.32	59.6	28.4																		88.0
97.40	216.0	218.9																		434.9
97.50		5.9																		5.9
97.60	19.7	3.3	13.2		3.3		13.2	9.9												62.6
97.70		2.8	25.6	8.6	20.0	17.1	11.4	5.7												91.2
97.80		2.8	2.8		2.8	2.8	5.7	11.4												28.3
97.90	3.3				3.3	6.6	6.6	19.7	3.3											42.8
100.40	34.3	22.9	30.5																	87.7
100.50	6.5	6.5	3.2																	16.2
100.60	6.4						16.0													22.4
100.70	23.3	20.0	30.0		10.0	16.6	3.3													103.2
100.80			25.7	28.9	19.3															73.9
100.90			3.2	6.3	12.6															22.1
100.100				16.4	36.1		6.6	13.1												72.2
103.40		15.9	3.2																	19.1
103.50	29.7	3.0			3.0															35.7
103.60		9.4	3.2	3.2	12.6	9.4	9.4		3.2	6.3										56.7
103.70		9.5	15.9		3.2	3.2	12.7	9.5	6.4											60.4
103.80		3.3			3.3															6.6
103.90				3.2	3.2				3.2											9.6

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 36 (cont'd):																				
107.32		3.2	22.3	3.2																28.7
107.35		3.0	5.9																	8.9
107.50	28.7	10.8	10.8	3.6				3.6												57.5
107.60	6.9	10.4	6.9																	24.2
107.70		6.3	15.8	3.2	12.6															37.9
107.80	3.1	3.1		3.1	9.2				3.1											21.6
110.40			33.2	23.2																56.4
110.50	3.0	8.9	29.6	3.0																44.5
110.60	14.4	11.6	8.7	2.9																37.6
110.70	3.0	5.9	3.0		8.8			3.0	5.9											29.6
110.80	28.4	22.1	44.2																	94.7
110.90	79.6	41.5	55.4	3.5																180.0
113.60								2.8			2.8									5.6
113.65						2.9	2.9	2.9												8.7
113.70				6.2		3.1	3.1	3.1												15.5
117.45				9.4																9.4
120.45		3.0																		3.0
120.65		5.9																		5.9
120.80	3.0	3.0																		6.0
123.45			2.9	2.9																5.8
123.50			11.3																	11.3
123.55		9.0	9.0																	18.0
123.60		2.8																		2.8
127.50		3.0	8.8																	11.8
127.55			17.5	14.6																32.1
130.35				2.7																2.7
130.50	3.1																			3.1
130.55	5.8	31.8	20.2																	57.8
130.60			37.7	8.7																46.4
Total	585.6	585.4	605.4	371.6	654.3	322.3	335.4	202.2	34.5	9.4	2.8									3708.9

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 37:																				
83.60	10.3	15.5	5.2																	31.0
83.70	2.9	2.9																		5.8
83.85		2.7																		2.7
83.90			2.8																	2.8
87.60		54.9																		54.9
87.70			17.4																	17.4
87.75			31.8																	31.8
87.80		4.9																		4.9
90.30	2.2	4.4	4.4	4.4	4.4															19.8
90.37		3.2	12.6	12.6	3.2															31.6
90.53	2.8	84.7	29.2	8.8																131.5
90.60	27.3	120.1	109.2	32.8	5.5															294.9
90.65		6.1				3.0														9.1
90.70	9.3	80.9	80.9	3.1	3.1		3.1													180.4
90.75	17.8	83.2	157.4	118.8	26.7	8.9	8.9	3.0					3.0							427.7
90.80	19.1	95.6	90.8	26.3	26.3	7.2														265.3
90.90	21.0	26.3	23.7	10.5	28.9	5.3	5.3													121.0
93.30		3.2	3.2																	6.4
93.35	3.3		3.3			3.3														9.9
93.40	10.1	26.9	3.4																	40.4
93.45	6.5																			6.5
93.50	3.2	6.3	12.7																	22.2
93.55	81.2	69.6	5.8																	156.6
93.60		3.3	19.6	3.3																26.2
93.65			6.5	13.0	3.3		6.5	3.3												32.6
93.70	20.9	6.0	20.9	15.0	23.9	20.9														107.6
93.75	3.2	19.2	9.6	16.0	6.4															54.4
93.80	12.8	57.4	82.9	89.3	31.9	6.4	3.2	3.2												297.1
97.35			3.7	3.7			3.7	3.7												14.8
97.40		31.5	25.2		3.2															59.9
97.45	150.1	359.1	171.5																	680.7
97.50			5.7																	5.7

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 37 (cont'd):																				
97.55	3.5		3.5	3.5																10.5
97.60			4.1																	4.1
97.65			4.0		4.0		8.0													16.0
97.70			68.8	53.5	22.9															145.2
97.75	2.9		14.4	5.8	17.3	2.9	5.8													49.1
97.80	3.6	7.3	62.0	21.9	18.2	7.3		3.6	3.6											127.5
97.90	5.6	19.7	31.0	5.6			2.8													64.7
100.40			2.5		2.5															5.0
100.45	9.4	14.2	4.7																	28.3
100.55	7.0	27.8	17.4																	52.2
100.60				3.0	29.8	11.9	20.9													65.6
100.65	4.8	4.8	9.7		4.8															24.1
100.70				2.6																2.6
100.75	5.8	3.9	3.9	5.8	1.9		1.9	1.9												25.1
100.80		2.3	2.3	2.3																6.9
100.90	5.9	17.8	20.7	23.7	17.8	3.0	5.9	3.0												97.8
103.35		5.7	34.2	2.8		5.7		2.8												51.2
103.40	10.6	29.3	23.9	34.6	21.3	5.3	10.6	5.3	2.7	2.7										146.3
103.45		2.3	4.5	2.3			6.8		2.3											18.2
103.50			2.8		8.5		2.8	11.4												25.5
103.60		3.0	29.6	35.5	11.8	3.0														82.9
103.65				5.3	13.3	5.3	2.7		2.7											29.3
103.70		3.2	28.5	25.4	34.9	3.2	12.7					3.2								111.1
103.75	2.4	2.4	7.2		4.8															16.8
103.80	16.0	9.1	2.3																	27.4
103.90		31.2	11.4																	42.6
107.35	4.3		8.6		4.3															17.2
107.40			2.5			2.5	4.9	4.9	2.5	2.5										19.8
107.45			2.2		4.4		6.6													13.2
107.50						4.6	13.7													18.3
107.60	5.1	5.1	5.1		5.1	2.6														23.0
107.70			5.3		2.6															7.9
107.80	8.1	13.5	5.4	8.1	8.1															43.2

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 37 (cont'd):																				
110.33			4.0	4.0		2.0			2.0											12.0
110.35		13.0	29.2	104.0	87.8	16.2			3.2											253.4
110.45			4.9	9.9				4.9		4.9										24.6
110.50				7.4			3.7													11.1
110.60	3.0	3.0	5.9	3.0		3.0												3.0*		20.9
110.70	6.9		6.9	3.5		3.5														20.8
110.80		15.4	21.5	43.0	27.6	24.6	6.1	6.1												144.3
110.90	2.7	2.7	2.7	2.7																10.8
113.35	3.2																			3.2
113.40	3.1			6.1	6.1															15.3
113.45	10.1	10.1	2.5	5.1	2.5	2.5	2.5	20.2	2.5											58.0
113.50	3.2						3.2	25.4												31.8
113.55								6.2			3.1									9.3
113.60			3.1	15.7							3.1									21.9
113.65			3.3																	3.3
113.70		3.2	3.2	9.6	3.2	3.2	6.4													28.8
117.30						1.8														1.8
117.35		3.1		3.1																6.2
117.45											2.2									2.2
117.55	3.6	3.6					3.6													10.8
117.60				2.6																2.6
117.70										3.4			3.4							6.8
120.45				3.2	3.2															6.4
120.70						3.4	6.8	3.4												13.6
120.80	2.3																			2.3
123.45				4.1			8.2	4.1												16.4
123.50			14.8			3.0														17.8
123.60			6.2																	6.2
130.35				3.3																3.3
130.45			5.4	8.1	2.7		2.7													18.9
130.50		2.8	19.9	11.4	14.2	5.7	5.7													59.7
130.60					2.9															2.9
Total	543.1	1427.4	1495.4	849.1	555.3	181.2	185.7	116.4	21.5	13.5	8.4	3.2	6.4					3.0		5409.6

* - 20.0 mm. larva

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 38:																				
70.90	7.9																			7.9
70.100	2.7	10.8	29.6	2.7		2.7														48.5
73.55					17.5		2.9													20.4
80.60			5.8			5.8	2.9													14.5
80.65				6.4	19.1	12.8														38.3
80.70					5.8															5.8
80.90	5.3	5.3																		10.6
80.100	2.8	11.3	2.8																	16.9
83.60			3.5	3.5	3.5															10.5
83.70			32.3	14.7	5.9	2.9	2.9													58.7
83.90				2.8	2.8		2.8													8.4
87.55		32.6	27.2		10.9															70.7
87.60		13.2	13.2																	26.4
87.70	22.4		67.2	22.4	11.2	11.2														134.4
87.80		5.8	72.0	28.8	28.8	28.8	11.5													175.7
90.30					1.9															1.9
90.33					2.8															2.8
90.37E1				10.5	10.5															21.0
90.37E2					2.7															2.7
90.39										3.0										3.0
90.41													3.1							3.1
90.45							6.7		6.7											13.4
90.45E					10.4	5.2	10.4	5.2	5.2											36.4
90.53			24.2	39.4	45.4	39.4	30.3	12.1												190.8
90.53E			14.6	5.8	5.8	20.4	14.6	49.5	5.8	2.9										119.4
90.60	3.7		3.7		11.0	11.0	33.1	22.1	3.7											88.3
90.60E	11.5	25.8	68.9	45.9	34.4	28.7	43.0	28.7												286.9
90.65	10.1	6.7	6.7	6.7	16.8	10.1	33.6	10.1												100.8
90.70	25.3	6.3		6.3			12.6													50.5
90.80	2.8		5.7	2.8	25.6	5.7	11.4	5.7												59.7
90.90		2.9					2.9													5.8
90.100		2.8	2.8	2.8	8.2		5.5	8.2												30.3
93.30	3.1	3.1																		6.2
93.30E			4.9																	4.9
93.35							3.2	3.2												6.4
93.40			7.0	38.6	66.7	66.7	14.0	10.5	3.5											207.0
93.40E			5.9			5.9	5.9													17.7

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 38 (cont'd):																				
93.45				14.1	14.1	7.1			7.1											42.4
93.50E									2.8											2.8
93.55	7.0	3.5	14.0	45.5	52.5	52.5	7.0	17.5	3.5	3.5										206.5
93.60	7.3	29.4	25.7	18.4	25.7	25.7	11.0	3.7												146.9
93.60E			12.1	9.1	3.0			6.0												30.2
93.65		6.5	26.1	26.1	13.0	6.5		6.5	3.3											88.0
93.70	17.6	49.3	49.3	7.0	14.1	14.1	10.6													162.0
93.80			3.8	3.8		3.8		7.6	7.6											26.6
97.35		2.8			5.6				2.8											11.2
97.40						3.1	3.1	3.1	9.2	6.1										24.6
97.45					5.9	5.9	14.6	23.4	5.9	5.9										61.6
97.50				3.3			6.7	3.3	6.7	6.7										26.7
97.50E			8.8	20.6	62.0	44.2	29.5	32.4	5.9	5.9	3.0									212.3
97.55						3.1	6.1	6.1		3.1										18.4
97.60					6.5		6.5	3.3	9.8	3.3										29.4
97.60E		8.4	2.8	8.4	2.8	5.6	5.6	11.2	22.3	8.4										75.5
97.65	3.1		22.0	53.4	6.3	3.1	3.1	25.1	9.4											125.5
97.70		6.4	19.1	16.0	16.0	6.4	12.8	51.0	16.0											143.7
97.80		9.1	18.2	6.1	12.1	3.0		3.0		3.0										54.5
97.90			10.0	13.4	40.1	6.7														70.2
100.35E			5.9		3.0															8.9
100.40			4.6		4.6															9.2
100.40E			3.1	9.3	3.1	3.1			3.1											21.7
100.45			3.5		7.1	3.5	10.6													24.7
100.50								6.4												6.4
100.50E			2.8	2.8	2.8				2.8	5.6	2.8			2.8						22.4
100.55				3.3	3.3	3.3			3.3											13.2
100.60E			9.0			3.0	9.0	12.0	6.0											39.0
100.65			7.4	3.7	3.7				3.7											18.5
100.70			12.1	9.1	9.1	3.0	3.0		6.0											42.3
100.80			17.4	38.2	48.6	6.9	3.5													114.6
100.90			18.6	7.5																26.1
100.100			3.3	3.3		3.3														9.9
103.35E				2.8						2.8										5.6
103.50								2.8	2.8	2.8			2.8							11.2
103.60		2.8	5.6		2.8		2.8	5.6	5.6											25.2
103.65	11.0	3.7	11.0		14.6						3.7									44.0
103.70			47.2	100.8	44.1	9.4	3.2	3.2												207.9

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.) 2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 38 (cont'd):																				
103.75			23.3	14.6	11.6	2.9	2.9													55.3
103.80			14.9	7.5	3.7		11.2													37.3
103.90		5.0		7.4	5.0	7.4	2.5		2.5											29.8
107.35				3.2		3.2														6.4
107.40			3.1	9.3						3.1										15.5
107.45		3.3	6.5																	9.8
107.50			3.0	3.0	3.0	3.0	3.0		3.0											18.0
107.55				12.1	6.1	3.0					3.0									24.2
107.60								3.0												3.0
107.65		3.6	3.6				3.6	3.6	3.6											18.0
107.70			16.9	6.8	3.4															27.1
107.80		5.9				5.9														11.8
110.35				2.7																2.7
110.40				19.5																19.5
110.45			5.2					2.6												7.8
110.50			3.6		3.6	3.6														10.8
110.55			7.4	7.4						3.7										18.5
110.60			3.2	3.2																6.4
110.65			3.7	3.7		3.7														11.1
110.70		3.6	7.1	10.7	10.7	7.1	3.6	3.6												46.4
110.80			12.4	3.1			3.1													18.6
113.60			3.2				3.2	3.2		3.2										12.8
113.65				6.5	3.2	3.2				3.2										16.1
113.70		20.5	11.7																	32.2
117.65			44.0	15.7					3.1											62.8
117.70								3.3												3.3
120.50			2.8	5.7	2.8															11.3
120.55		6.2	28.1																	34.3
120.65		3.3	22.9																	26.2
120.70										2.7										2.7
123.50																3.2				3.2
123.60		2.9																		2.9
130.50			11.8					2.9												14.7
Total	143.6	302.8	999.8	808.2	827.3	526.6	432.0	410.7	182.7	78.9	12.5		5.9	2.8		3.2				4737.0

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 39:																				
73.55				10.0																10.0
73.60	15.1	38.0	32.9	17.7	17.7	2.5	10.1	22.8												156.8
77.50							2.7													2.7
77.65		52.8	79.2	13.2																145.2
80.55					3.7															3.7
80.65								10.2												10.2
85.60		12.0																		12.0
85.70			2.7	16.3		5.4	2.7	13.6	19.0	2.7				2.7						65.1
85.80	5.1	15.4	5.1	5.1	2.6	2.6	7.7	7.7												51.3
85.90			6.5	19.4	6.5		6.5		6.5	6.5										51.9
90.28				5.7																5.7
90.30					3.1	3.1														6.2
90.37								2.7												2.7
90.53		18.1	18.1	30.2	18.1	30.2	6.0	54.4	12.1											187.2
90.70					2.6			5.1		2.6										10.3
90.80				3.2	3.2	3.2	3.2	12.6	3.2	3.2										31.8
90.90								3.0												3.0
93.35				3.1		3.1														6.2
93.40		5.7		11.4	2.9	2.9				2.9	2.9									28.7
93.45		9.2	13.9	23.1	13.9	18.5	9.2	4.6												92.4
93.50		10.3	31.0	77.4	25.8	15.5	36.1	15.5	5.2	5.2										222.0
93.55	12.1	84.6	157.0	247.6	60.4	72.5	30.2	30.2	6.0	6.0										706.6
93.60		5.5	5.5	44.0	5.5	60.5	71.5	55.0	5.5											253.0
93.70		6.2	9.3																	15.5
93.80	2.8	5.6				2.8	2.8	2.8	2.8											19.6
93.90						2.9														2.9
97.40	3.0	3.0	30.5	64.0	45.8	48.8	6.1	6.1												207.3
97.45	82.9	82.9	177.6	301.9	148.0	177.6	29.6	11.8												1012.3
97.50	68.7	130.8	379.3	389.1	173.3	111.2	22.9	13.1		6.5										1294.9
97.55	8.0	32.2	83.1	88.4	24.1	8.0	5.4	8.0												257.2
97.60	10.5	5.2	10.5	10.5	5.2							10.5					5.2			57.6
97.70		6.4	9.5	9.5	9.5	3.2	3.2	22.3	9.5	3.2	3.2	9.5								89.0
97.80		2.3	4.6	4.6	4.6		2.3	9.1			20.5	2.3								50.3
97.90	5.9	11.7	5.9	2.9	2.9	2.9														32.2

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.) 2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 39 (cont'd):																				
100.40	6.7	3.3	3.3		10.0	10.0		10.0												43.3
100.45		5.5	43.8	38.4	32.9	38.4	16.4		5.5											180.9
100.50	2.7		8.2				2.7	8.2												21.8
100.55					6.6															6.6
100.70			6.4	22.5	32.2	32.2	16.1	19.3												128.7
100.80	2.8		2.8			5.6	2.8													14.0
100.90		2.7	2.7		2.7															8.1
100.100						3.0														3.0
105.35	5.4	19.0	78.6	29.8	5.4	5.4														143.6
105.40	6.4	12.7		12.7																31.8
105.45	3.3			6.6					3.3											13.2
105.50	6.7	16.8	6.7	10.0	6.7															46.9
105.55	2.4	12.2	2.4	7.3	7.3															31.6
105.60			5.6	2.8			5.6													14.0
105.70		8.7	14.4	23.1	2.9			5.8												54.9
105.80			2.4	2.4	4.8	4.8		2.4												16.8
105.90		12.0	9.0	6.0	6.0	6.0		3.0												42.0
110.40		5.0	2.5	5.0																12.5
110.50							2.5	2.5												5.0
110.60		2.9	5.9		5.9	14.6	5.9		2.9											38.1
110.70		2.3		4.5	2.3			2.3												11.4
110.80				5.1	2.5	5.1														12.7
110.90				6.6		2.2	2.2													11.0
113.50		2.6																		2.6
113.55		7.6		2.5																10.1
113.70					2.9	2.9														5.8
117.60																3.3				3.3
120.50						3.2														3.2
123.60												6.1								6.1
127.45																		2.9*		2.9
Total	250.5	651.2	1256.9	1583.6	710.5	710.8	312.4	364.1	81.5	38.8	26.6	28.4		2.7		3.3	5.2	2.9		6029.4

* - 34.0 mm. larva

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1952

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & larger	Uncl.	Total
Cruise 40:																				
77.55	3.1																			3.1
80.60			6.6																	6.6
80.80		14.2	20.0	2.8				2.8												39.8
80.90					3.1															3.1
80.100								2.7												2.7
85.38												2.8								2.8
90.37			5.5																	5.5
90.70	2.7		2.7																	5.4
93.50	11.0	11.0	5.5						2.8		2.8	2.8			2.8					38.7
97.32		5.1																		5.1
97.40		17.2	22.9	51.5	28.6	17.2	11.4	5.7												154.5
97.50		49.7	118.7	35.9	19.3				2.8											226.4
100.40																		11.5*		11.5
100.50		5.0																		5.0
100.60		3.1		3.1	3.1															9.3
103.35	3.0	5.9																		8.9
103.40			5.5																	5.5
107.35													2.8							2.8
Total	19.8	111.2	187.4	93.3	54.1	17.2	11.4	11.2	5.6		2.8	5.6	2.8		2.8			11.5		536.7
Cruise 41:																				
80.55																			3.1	3.1
85.40			2.7		2.7															5.4
90.30					2.6															2.6
90.37				2.8																2.8
90.45	2.4																			2.4
90.53	2.9																			2.9
93.40	18.2	33.3	6.1																	57.6
93.50	7.6																			7.6
97.32		2.0	4.1																	6.1
97.40		3.8	7.6	22.8	72.2	49.4	3.8												3.8	163.4
97.50																			14.2	14.2
Total	31.1	39.1	20.5	25.6	77.5	49.4	3.8												21.1	268.1
Cruise 42:																				
85.38			2.0																	2.0
97.32		3.2																		3.2
107.35							2.7													2.7
Total		3.2	2.0				2.7													7.9
Cruise 43:																				0

* - One larva of each of the following sizes: 17.0, 19.5, 21.5, 24.5 and 30.0 mm.

Table VI

Record of the Larvae of Hake (Merluccius productus), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
40.38	-	-	-	-	-	-	-		-	-	-	-
40.50	-	-	-	-	-	-	-		-	-	-	-
40.60	-	-	-	-	-	-	-		-	-	-	-
40.70	-	-	-	-	-	-	-		-	-	-	-
40.80	-	-	-	-	-	-	-		-	-	-	-
40.90	-	-	-	-	-	-	-		-	-	-	-
43.42	-	-	-	-	-	-	-		-	-	-	-
43.50	-	-	-	-	-	-	-	NQ	-	-	-	-
47.50	-	-	-	-	-	-	-		-	-	-	-
47.55	-	-	-	-	-	-	-		-	-	-	-
47.60	-	-	-	-	-	-	-		-	-	-	-
50.47	-	-	-	-	-	-	-		-	-	-	-
50.50	-	-	-	-	-	-			-	-	-	-
50.55	-	-	-	-	-	-	-		-	-	-	-
50.60	-	-	-	-	-	-	NQ		-	-	-	-
50.70	-	-	-	-	-	-	-		-	-	-	-
53.52	-	-	-	-	-	-		-	-	-	-	-
53.55	-	-	-	-	-	-			-	-	-	-
53.60	-	-	-	-	-	-	-		-	-	-	-
53.65	-	-	-	-	-	-			-	-	-	-
57.51	-	-	-	-	-	-			-	-	-	-
57.55	-	-	-	-	-	-			-	-	-	-
57.60	-	-	-	-	-	-	-		-	-	-	-
57.65	-	-	-	-	-	-			-	-	-	-
60.55	-	-	-	-		-		NQ				
60.57	-	-	-	-	-	-	-		-	-	-	-
60.60	-	-	-	-		-			-			
60.65	-	-	-	-	-	-		NQ	-	-	-	-
60.70	-	-	-	-		-			-			
60.80	-	-	-	-	3		NQ	-	-			
60.90	-	-	-	-	17				-			
60.100	-	-	-	-	-			-	-			
60.110	-	-	-	-	-	-	-	-	-			
63.52	-	-	-	-								
63.55	-	-	-	-								
63.60	-	-	-	-	-				-	-	-	-
63.65	-	-	-	-	-				-	-	-	-
67.50	-	-	-	-				NQ			-	
67.55	-	-	-	-								
67.60	-	-	-	-	-	-			-	-	-	-
67.65	-	-	-	-	-	-						

Table VI (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
70.51	-	-	-	-	-	-	-				-	
70.55	-	-	-	-				-	-	-	-	-
70.60	-	-	-	-								
70.65	-	-	-	-	-				-	-	-	-
70.70	-	-	-	-	4	3						
70.75	-	-	-	-	-	-		-	-	-	-	-
70.80	-	-	-	-	12							
70.90	-	-	-	-	10				-	-	-	-
70.100	-	-	-	-	-			-	-	-	-	-
73.50	-	-	-	-								-
73.55	-	-	-	-	-				-	-	-	-
73.60	-	-	-	-	5		NQ					-
77.50	-	-	-	-							-	-
77.55	-	-	-	-	2							
77.60	-	-	-	-	-				-	-	-	-
77.65	-	-	-	-	-		NQ					
80.51				-								
80.55				-	11							
80.60			8	-	6		3					
80.65	-	-	-	-	-	-			-	-	-	-
80.70			2386	-	3		6					
80.75	-	-	-	-	-	-	NQ	-	-	-	-	-
80.80			134	-	2	10						
80.85	-	-	-	-	-		-	-	-	-	-	-
80.90			NQ	-	8							
80.100			-	-		3						
80.110		-	-	-	-	-	-	-	-	-	-	-
83.43	-	-	-	-	-			-	-	-	-	-
83.55	-	-	-	-	18	3		-	-	-	-	-
83.60	-	-	-	-	3	16		-	-	-	-	-
83.65	-	-	-	-	-		NQ	-	-	-	-	-
83.70	-	-	-	-				-	-	-	-	-
83.75	-	-	-	-	-			-	-	-	-	-
83.80	-	-	-	-				-	-	-	-	-
83.85	-	-	-	-	-		-	-	-	-	-	-
83.90	-	-	-	-	2			-	-	-	-	-
85.38	10	5	16	-	-	-	-					
85.40		2	44	-	-	-	-					
85.45	-	-	-	-	-	-	-		-	-	-	-
85.50				-	-	-	-					
85.55	-	-	-	-	-	-	-		-	-	-	-

Table VI (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
85.60			14	-	-	-	-					
85.70		11		-	-	-	-		-	-	-	-
85.80	-	-	-	-	-	-	-		-	-	-	-
85.90	-	-	-	-	-	-	-		-	-	-	-
87.35	-	-	-	-	4			-	-	-	-	-
87.40	-	-	-	-		3		-	-	-	-	-
87.45	-	-	-	-	-			-	-	-	-	-
87.50	-	-	-	-	3			-	-	-	-	-
87.55	-	-	-	-	-	6		-	-	-	-	-
87.60	-	-	-	-	20			-	-	-	-	-
87.65	-	-	-	-	-	6	-	-	-	-	-	-
87.70	-	-	-	-	37	9	11	-	-	-	-	-
87.75	-	-	-	-	-		-	-	-	-	-	-
87.80	-	-	-	-	84	2	3	-	-	-	-	-
87.90	-	-	-	-		-	-	-	-	-	-	-
90.28		3		-								
90.30	2	46	7	-		2						
90.37		6	8	-	10						-	
90.45	5	11	2417	-	56							
90.53		10000	2136	-	97	12	6					
90.60		371	189	-	62							
90.65	-	-	-	-	-	6		-	-	-	-	-
90.70			144	-	2922	(65)						
90.75	-	-	-	-	-	27	-	-	-	-	-	-
90.80			3156	-	166	17			-	-	-	-
90.90		3	1080	-	1935	10			-	-	-	-
90.100	-	-	-	-	993	-			-	-	-	-
93.27	4		13	-	22	3						
93.30	4		155	-	35	6						
93.35	-	-	-	-	-				-	-	-	-
93.40			257	-	74		2					
93.45	-	-	-	-	-		7		-	-	-	-
93.50		3	2754	-	368	3	2					
93.55	-	-	-	-	-	3	4		-	-	-	-
93.60			634	-	385	3			-	-	-	-
93.65	-	-	-	-	-	29		-	-	-	-	-
93.70			83	-	158	27			-	-	-	-
93.75	-	-	-	-	-	38	-	-	-	-	-	-
93.80	-	-	-	-	1017	26			-	-	-	-
93.90	-	-	-	-	476	-	-		-	-	-	-

Table VI (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
97.30		2		-	-						-	
97.32	2	21	292	-	37	-						
97.35	-	-	-	-	-	7		-	-	-	-	-
97.40			273	-	46	6	2					
97.45	-	-	-	-	-	11	3		-	-	-	-
97.50		152	8	-	48	6	8	3				
97.55	-	-	-	-	-	7	6		-	-	-	-
97.60		49	2067	-	234	8	1		-	-	-	-
97.65	-	-	-	-	-	4	9	-	-	-	-	-
97.70	3		1361	-	142	4			-	-	-	-
97.75	-	-	-	-	-		-	-	-	-	-	-
97.80	-	-	-	-	2533				-	-	-	-
97.90	-	-	-	-	691				-	-	-	-
100.29		-	15	-	18							
100.30	-	2	36	-	30							
100.35	-	-	-	-	-	-			-	-	-	-
100.40		68	57	-	53		2					
100.45	-	-	-	-	-				-	-	-	-
100.50			9	-	84							-
100.55	-	-	-	-	-				-	-	-	-
100.60	-		507	-	58	6	2					
100.65	-	-	-	-	-			-	-	-	-	-
100.70				-								
100.75	-	-	-	-	-		-	-	-	-	-	-
100.80		3	11	-	10							
100.90			948	-	22				-	-	-	-
100.100	-	-	-	-	220	-			-	-	-	-
103.30	-	-	-	-	11			-				
103.35	-	-	-	-				-				
103.40	-	-	-	-	25		3	-				
103.45	-	-	-	-	-	2	-	-	-	-	-	-
103.50	-	-	-	-	184			-	-	-	-	-
103.55	-	-	-	-	-	NQ		-	-	-	-	-
103.60	-	-	-	-	19		6	-	-	-	-	-
103.65	-	-	-	-	-			-	-	-	-	-
103.70	-	-	-	-	25			-	-	-	-	-
103.75	-	-	-	-	-			-	-	-	-	-
103.80	-	-	-	-	59			-	-	-	-	-
103.90	-	-	-	-	231			-	-	-	-	-

Table VI (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
105.32				-	-	-	-		-	-	-	-
105.35			33	-	-	-	-		-	-	-	-
105.40			10	-	-	-	-		-	-	-	-
105.45	-	-	-	-	-	-	-		-	-	-	-
105.50			93	-	-	-	-		-	-	-	-
105.55	-	-	-	-	-	-	-		-	-	-	-
105.60			3	-	-	-	-		-	-	-	-
105.70				-	-	-	-		-	-	-	-
105.80			-	-	-	-	-		-	-	-	-
105.90	-	-	-	-	-	-	-		-	-	-	-
107.32	-	-	-	-	29	17		-				
107.35	-	-	-	-				-				
107.40	-	-	-	-	6			-			-	-
107.45	-	-	-	-	-			-	-	-	-	-
107.50	-	-	-	-	25			-	-	-	-	-
107.55	-	-	-	-	-	-		-	-	-	-	-
107.60	-	-	-	-				-	-	-	-	-
107.65	-	-	-	-	-	-		-	-	-	-	-
107.70	-	-	-	-				-	-	-	-	-
107.80	-	-	-	-	34			-	-	-	-	-
110.33		7	-	-	6							-
110.35		831	22	-	6							
110.40		5	41	-	20	3						
110.45	-	-	-	-	-			-	-	-	-	-
110.50			324	-	6							
110.55	-	-	-	-	-	-		-	-	-	-	-
110.60	-		27	-								
110.65	-	-	-	-	-	-		-	-	-	-	-
110.70			5	-	41				-	-	-	-
110.80			-	-					-	-	-	-
110.90			-	-					-	-	-	-
113.30	-	36	21									
113.35	-	340	649	18	39						-	
113.40	-	3600	3	34	7							
113.45	-	-	-	20	-				-	-	-	-
113.50	-		18	45	-				-	-	-	-
113.55	-	-	-	7	-	3			-	-	-	-
113.60	-		25	14	42				-	-	-	-
113.65	-	-	-	11	41	3		-	-	-	-	-
113.70	-		-		6	3			-	-	-	-

Table VI (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
115.27		-	-	-	-	-	-	-			-	-
115.30	-	-	-	-	-	-	-	-			-	-
115.35		-	-	-	-	-	-	-			-	-
115.40		-	-	-	-	-	-	-	-	-	-	-
115.50		-	-	-	-	-	-	-	-	-	-	-
115.60		-	-	-	-	-	-	-	-	-	-	-
115.70		-	-	-	-	-	-	-	-	-	-	-
117.26	-	2										
117.30	-			3					2		9	
117.35	-	3	5	60	21						-	
117.40	-	3	66	18	3				3			
117.45	-	-	-	28					-	-	-	-
117.50	-	3	204	3					-	-	-	-
117.55	-	-	-						-	-	-	-
117.60	-		116	3					-	-	-	-
117.65	-	-	-	8				-	-	-	-	-
117.70	-		-						-	-	-	-
120.25		3										
120.30		16	2	47								
120.35	2	10		14								
120.37	-	-	-	-	-	-	-		-	-	-	-
120.40	-	-	-			1		-	-	-	-	-
120.45	3	7	79	3								
120.50			6		3							
120.55	-	-	-	3					-	-	-	-
120.60		3										
120.65	-	-	-					-	-	-	-	-
120.70					3							
120.80												
120.90		3										
123.37		69	20		26	3						
123.40	4	368	116	6	2							
123.45	-	-	-	9	10				-	-	-	-
123.50			156	9	51							
123.55	-	-	-		6			-	-	-	-	-
123.60									-	-	-	-
127.34	2	-	11	25	5							
127.40		-	148	159	25		10					-
127.45	-	-	-	144	7		3		-	-	-	-
127.50		-	36	6								
127.55	-	-	-	30		3		-	-	-	-	-
127.60			3			3			-	-	-	-

Table VI (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
130.30		2		2								
130.35		37	9	31		3	6					
130.40	119	19	314	15	29							
130.45	-	-	-	61	93				-	-	-	-
130.50	9	32	68	16	15	8						
130.55	-	-	-	6	38			-	-	-	-	-
130.60	3		22		35							
130.70		-	-	-	-	-	-	-	-	-	-	-
130.80		-	-	-	-	-	-	-	-	-	-	-
133.25	2			59	10			-				
133.30			3	60	23							
133.35	-	-	-	16	9	3			-	-	-	-
133.40		60	11	116		5	3		-	-	-	-
133.45	-	-	-	8	14				-	-	-	-
133.50	26	-	22		3		NQ		-	-	-	-
133.60		-	-		9	-	-	-	-	-	-	-
137.23			4	4								
137.30	373	535	38	3	87							
137.35	-	-	-	-	247	6			-	-	-	-
137.40	211	13	103	111	90				-	-	-	-
137.45	-	-	-		12				-	-	-	-
137.50		3	26	-	15	3			-	-	-	-
137.60		-	-			-	-	-	-	-	-	-
140.30	-	32	-	-	-	-	-	-	-		-	-
140.35	-	233	-	-	-	-	-	-	-	-	-	-
140.40	-	158	-	-	-	-	-	-	-	-	-	-
140.50	-		-	-	-	-	-	-	-	-	-	-
143.26	-	2	-	-	-	-	-	-	-		-	-
143.30	-	23	-	-	-	-	-	-	-	-	-	-
143.35	-		-	-	-	-	-	-	-	-	-	-
147.20	-		-	-	-	-	-	-	-		-	-
147.25	-		-	-	-	-	-	-	-	-	-	-
147.30	-		-	-	-	-	-	-	-	-	-	-
150.19	-		-	-	-	-	-	-	-		-	-
150.25	-	8	-	-	-	-	-	-	-	-	-	-
150.30	-		-	-	-	-	-	-	-	-	-	-
150.40	-		-	-	-	-	-	-	-	-	-	-
Totals	784	17224	24081	1238	15020	466	108	3	5	0	9	0

Table VII

Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
90.28				-								
90.30				-				25				
90.37				-							-	
90.45				-								
90.53				-			3					
90.60				-								
90.65	-	-	-	-	-			-	-	-	-	-
90.70				-								
90.75	-	-	-	-	-		-	-	-	-	-	-
90.80				-					-	-	-	-
90.90				-					-	-	-	-
90.100	-	-	-	-	3	-			-	-	-	-
93.27				-								
93.30				-								
93.35	-	-	-	-	-				-	-	-	-
93.40				-								
93.45	-	-	-	-	-				-	-	-	-
93.50				-				10				
93.55	-	-	-	-	-			12	-	-	-	-
93.60				-				11	-	-	-	-
93.65	-	-	-	-	-			-	-	-	-	-
93.70				-					-	-	-	-
93.75	-	-	-	-	-		-	-	-	-	-	-
93.80	-	-	-	-			4		-	-	-	-
93.90	-	-	-	-		-	-	3	-	-	-	-
97.30				-							-	
97.32				-		-						
97.35	-	-	-	-	-	4		-	-	-	-	-
97.40				-								
97.45	-	-	-	-	-	5		18	-	-	-	-
97.50				-								
97.55	-	-	-	-	-				-	-	-	-
97.60				-					-	-	-	-
97.65	-	-	-	-	-			-	-	-	-	-
97.70				-			3		-	-	-	-
97.75	-	-	-	-	-		-	-	-	-	-	-
97.80	-	-	-	-					-	-	-	-
97.90	-	-	-	-			10	3	-	-	-	-
100.29		-		-								
100.30	-			-								
100.35	-	-	-	-	-				-	-	-	-
100.40				-								
100.45	-	-	-	-	-				-	-	-	-
100.50				-								
100.55	-	-	-	-	-				-	-	-	-

Table VII (cont'd)

Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
100.60	-			-								
100.65	-	-	-	-	-		4	-	-	-	-	-
100.70				-								
100.75	-	-	-	-	-		-	-	-	-	-	-
100.80				-			4					
100.90				-					-	-	-	-
100.100	-	-	-	-		-			-	-	-	-
103.30	-	-	-	-				-				
103.35	-	-	-	-				-				
103.40	-	-	-	-				-				
103.45	-	-	-	-	-		-	-	-	-	-	-
103.50	-	-	-	-				-	-	-	-	-
103.55	-	-	-	-	-			-	-	-	-	-
103.60	-	-	-	-				-	-	-	-	-
103.65	-	-	-	-	-			-	-	-	-	-
103.70	-	-	-	-		6		-	-	-	-	-
103.75	-	-	-	-	-			-	-	-	-	-
103.80	-	-	-	-			22	-	-	-	-	-
103.90	-	-	-	-				-	-	-	-	-
105.32				-	-	-	-		-	-	-	-
105.35				-	-	-	-		-	-	-	-
105.40				-	-	-	-		-	-	-	-
105.45	-	-	-	-	-	-	-		-	-	-	-
105.50				-	-	-	-		-	-	-	-
105.55	-	-	-	-	-	-	-		-	-	-	-
105.60				-	-	-	-		-	-	-	-
105.70				-	-	-	-		-	-	-	-
105.80			-	-	-	-	-	2	-	-	-	-
105.90	-	-	-	-	-	-	-		-	-	-	-
107.32	-	-	-	-				-				
107.35	-	-	-	-				-				
107.40	-	-	-	-				-			-	-
107.45	-	-	-	-	-			-	-	-	-	-
107.50	-	-	-	-				-	-	-	-	-
107.55	-	-	-	-	-	-		-	-	-	-	-
107.60	-	-	-	-				-	-	-	-	-
107.65	-	-	-	-	-	-		-	-	-	-	-
107.70	-	-	-	-				-	-	-	-	-
107.80	-	-	-	-				-	-	-	-	-
110.33			-	-								4
110.35				-								
110.40				-								
110.45	-	-	-	-	-			-	-	-	-	-
110.50				-								
110.55	-	-	-	-	-	-		-	-	-	-	-

Table VII (cont'd)
Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
110.60	-			-				9				
110.65	-	-	-	-	-	-		-	-	-	-	-
110.70				-					-	-	-	
110.80			-	-		6			-	-	-	
110.90			-	-					-	-	-	-
113.30	-											
113.35	-										-	
113.40	-					3						
113.45	-	-	-		-				-	-	-	-
113.50	-				-				-	-	-	-
113.55	-	-	-		-				-	-	-	-
113.60	-								-	-	-	-
113.65	-	-	-					-	-	-	-	-
113.70	-		-						-	-	-	-
115.27		-	-	-	-	-	-	-			-	-
115.30	-	-	-	-	-	-	-	-			-	-
115.35		-	-	-	-	-	-	-			-	-
115.40		-	-	-	-	-	-	-	-	-	-	-
115.50		-	-	-	-	-	-	-	-	-	-	-
115.60		-	-	-	-	-	-	-	-	-	-	-
115.70		-	-	-	-	-	-	-	-	-	-	-
117.26	-										2	
117.30	-											
117.35	-										-	4
117.40	-											
117.45	-	-	-						-	-	-	-
117.50	-					3			-	-	-	-
117.55	-	-	-			4	54		-	-	-	-
117.60	-								-	-	-	-
117.65	-	-	-					-	-	-	-	-
117.70	-		-						-	-	-	-
120.25											5	
120.30								2	13			2
120.35									12		21	
120.37	-	-	-	-	-	-	-		-	-	-	-
120.40	-	-	-					-	-	-	-	-
120.45					6	29					2	
120.50							6					
120.55	-	-	-				3		-	-	-	-
120.60												
120.65	-	-	-					-	-	-	-	-
120.70												
120.80												
120.90												

Table VII (cont'd)

Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
123.37										29	3	
123.40					3					12	7	
123.45	-	-	-		4				-	-	-	-
123.50												
123.55	-	-	-					-	-	-	-	-
123.60									-	-	-	-
127.34		-							18	38		
127.40		-			34	19						-
127.45	-	-	-	28	53	3			-	-	-	-
127.50		-										
127.55	-	-	-					-	-	-	-	-
127.60									-	-	-	-
130.30										20	6	
130.35						16						
130.40					3							
130.45	-	-	-			22			-	-	-	-
130.50						26						
130.55	-	-	-					-	-	-	-	-
130.60			5	6	67	3						
130.70		-	-	-	-	-	-	-	-	-	-	-
130.80		-	-	-	-	-	-	-	-	-	-	-
133.25			14									
133.30												
133.35	-	-	-		6				-	-	-	-
133.40									-	-	-	-
133.45	-	-	-						-	-	-	-
133.50		-					NQ		-	-	-	-
133.60		-	-			-	-	-	-	-	-	-
137.23	3		1							5		
137.30	2											
137.35	-	-	-	-					-	-	-	-
137.40									-	-	-	-
137.45	-	-	-						-	-	-	-
137.50				-					-	-	-	-
137.60		-	-			-	-	-	-	-	-	-
140.30	-		-	-	-	-	-	-	-		-	-
140.35	-	5	-	-	-	-	-	-	-	-	-	-
140.40	-		-	-	-	-	-	-	-	-	-	-
140.50	-		-	-	-	-	-	-	-	-	-	-
143.26	-		-	-	-	-	-	-	-		-	-
143.30	-		-	-	-	-	-	-	-	-	-	-
143.35	-		-	-	-	-	-	-	-	-	-	-
147.20	-	38	-	-	-	-	-	-	-		-	-
147.25	-		-	-	-	-	-	-	-	-	-	-
147.30	-		-	-	-	-	-	-	-	-	-	-
Totals	5	43	20	34	184	150	116	95	43	104	46	10

Table VIII

Record of the Larvae of Rockfish (Sebastodes spp.), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
40.38	-	-	-	-	-	-	-		-	-	-	-
40.50	-	-	-	-	-	-	-	18	-	-	-	-
40.60	-	-	-	-	-	-	-	54	-	-	-	-
40.70	-	-	-	-	-	-	-	30	-	-	-	-
40.80	-	-	-	-	-	-	-	13	-	-	-	-
40.90	-	-	-	-	-	-	-	25	-	-	-	-
43.42	-	-	-	-	-	-	-		-	-	-	-
43.50	-	-	-	-	-	-	-	NQ	-	-	-	-
47.50	-	-	-	-	-	-	-	44	-	-	-	-
47.55	-	-	-	-	-	-	-	121	-	-	-	-
47.60	-	-	-	-	-	-	-	68	-	-	-	-
50.47	-	-	-	-	-	-	-	3	-	-	-	-
50.50	-	-	-	-	-	-	33		-	-	-	-
50.55	-	-	-	-	-	-	-	37	-	-	-	-
50.60	-	-	-	-	-	-	-	5	-	-	-	-
50.70	-	-	-	-	-	-	-	3	-	-	-	-
53.52	-	-	-	-	-	-	9	-	-	-	-	-
53.55	-	-	-	-	-	-	12	24	-	-	-	-
53.60	-	-	-	-	-	-	-	12	-	-	-	-
53.65	-	-	-	-	-	-			-	-	-	-
57.51	-	-	-	-	-	-		2	-	-	-	-
57.55	-	-	-	-	-	-	18	44	-	-	-	-
57.60	-	-	-	-	-	-	-	5	-	-	-	-
57.65	-	-	-	-	-	-	16	6	-	-	-	-
60.55	-	-	-	-	4	-	102	NQ		3	28	10
60.57	-	-	-	-	-	-	-	19	-	-	-	-
60.60	-	-	-	-	18	-	212	73	-			6
60.65	-	-	-	-	-	-	6	NQ	-	-	-	-
60.70	-	-	-	-	24	-	6	58	-		25	6
60.80	-	-	-	-			NQ	-	-	3		
60.90	-	-	-	-				18	-			
60.100	-	-	-	-	-	6	3	-	-			
60.110	-	-	-	-	-	-	-	-	-			
63.52	-	-	-	-		2	3			11	2	7
63.55	-	-	-	-	78	12	19	22	7	9	11	5
63.60	-	-	-	-	-	32	6	44	-	-	-	-
63.65	-	-	-	-	-	16		5	-	-	-	-
67.50	-	-	-	-	13		5	NQ		13	-	6
67.55	-	-	-	-	24		32	77	31	34		
67.60	-	-	-	-	-	-		3	-	-	-	-
67.65	-	-	-	-	-	-		11	20		12	

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
70.51	-	-	-	-	-	-	-				-	13
70.55	-	-	-	-	6		8	-	-	-	-	-
70.60	-	-	-	-	29		13		6	5		13
70.65	-	-	-	-	-	23	11		-	-	-	-
70.70	-	-	-	-		47	13	93	13	10	3	
70.75	-	-	-	-	-	-	25	-	-	-	-	-
70.80	-	-	-	-	5		19	6	5	5		
70.90	-	-	-	-	17				-	-	-	-
70.100	-	-	-	-	-			-	-	-	-	-
73.50	-	-	-	-	62	23		5	3		14	
73.55	-	-	-	-	-	29	29	70	-	-	-	-
73.60	-	-	-	-	40		NQ	23			31	
77.50	-	-	-	-	22	11		148			-	
77.55	-	-	-	-	95	33	71	49	12		26	
77.60	-	-	-	-	-	9		14	-	-	-	-
77.65	-	-	-	-	-	6	NQ	40	25	16		
80.51	59	16		-	85	2	3	4		1		14
80.55	272	60	10	-	26	3	16	11	6	15	231	33
80.60	5	33	25	-	11	24	40	28	7	25	23	
80.65	-	-	-	-	-	-	6	10	-	-	-	-
80.70			20	-			23	9	3			
80.75	-	-	-	-	-	-	NQ	-	-	-	-	-
80.80		12	59	-		7			3			
80.85	-	-	-	-	-		-	-	-	-	-	-
80.90	3	14	NQ	-	14							
80.100		3	-	-	3							
80.110		-	-	-	-	-	-	-	-	-	-	-
83.43	-	-	-	-	-		10	-	-	-	-	-
83.55	-	-	-	-	78	32	136	-	-	-	-	-
83.60	-	-	-	-	83	52	11	-	-	-	-	-
83.65	-	-	-	-	-	22	-	-	-	-	-	-
83.70	-	-	-	-	77	6	41	-	-	-	-	-
83.75	-	-	-	-	-			-	-	-	-	-
83.80	-	-	-	-			17	-	-	-	-	-
83.85	-	-	-	-	-		-	-	-	-	-	-
83.90	-	-	-	-	2			-	-	-	-	-
85.38	77	166	304	-	-	-	-	22	11	29	14	49
85.40	202	174	240	-	-	-	-	10		13	3	10
83.45	-	-	-	-	-	-	-	3	-	-	-	-
83.50	76	510	123	-	-	-	-		12	9	20	3
85.55	-	-	-	-	-	-	-	6	-	-	-	-

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
85.60	309	9	35	-	-	-	-	12	11	8	3	
85.70	5			-	-	-	-	22	-	-	-	-
85.80	-	-	-	-	-	-	-	10	-	-	-	-
85.90	-	-	-	-	-	-	-		-	-	-	-
87.35	-	-	-	-	228	15	20	-	-	-	-	-
87.40	-	-	-	-	68		10	-	-	-	-	-
87.45	-	-	-	-	-	3	14	-	-	-	-	-
87.50	-	-	-	-	54	100	2	-	-	-	-	-
87.55	-	-	-	-	-	146	131	-	-	-	-	-
87.60	-	-	-	-	9	110	132	-	-	-	-	-
87.65	-	-	-	-	-	31	-	-	-	-	-	-
87.70	-	-	-	-		26	90	-	-	-	-	-
87.75	-	-	-	-	-	14	-	-	-	-	-	-
87.80	-	-	-	-			9	-	-	-	-	-
87.90	-	-	-	-		-	-	-	-	-	-	-
90.28	23	14	9	-	25	18			14	7	3	7
90.30	68	8	146	-	238	15	13	6	91			29
90.37	47	92	43	-	142	25	43	19	3	3	-	
90.45	29	94	40	-	285	40	66	6			7	
90.53	9	315		-	74	146	15		12			
90.60		8	8	-			8	3	9			8
90.65	-	-	-	-	-			-	-	-	-	-
90.70		3		-				3				
90.75	-	-	-	-	-		-	-	-	-	-	-
90.80				-				3	-	-	-	-
90.90				-					-	-	-	-
90.100	-	-	-	-		-			-	-	-	-
93.27	59	1	56	-	216	13			20		6	71
93.30	18	4	45	-	44	19	20	8	5	4		22
93.35	-	-	-	-	-	42	16		-	-	-	-
93.40	5	34	40	-	52	44	30	6	3			5
93.45	-	-	-	-	-	49	92	18	-	-	-	-
93.50	35	12	60	-		140	95	10				5
93.55	-	-	-	-	-	116	21	6	-	-	-	-
93.60		118		-	3	85		6	-	-	-	-
93.65	-	-	-	-	-			-	-	-	-	-
93.70				-					-	-	-	-
93.75	-	-	-	-	-		-	-	-	-	-	-
93.80	-	-	-	-	4				-	-	-	-
93.90	-	-	-	-		-	-		-	-	-	-

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
97.30	17	46	19	-	-	50	22	8		3	-	11
97.32	36	18	8	-	37	-	3	7	2	12		
97.35	-	-	-	-	-	26	37	-	-	-	-	-
97.40		12	26	-	6	69	35	9	29	8	3	
97.45	-	-	-	-	-	236	79		-	-	-	-
97.50		3	29	-	119	6	74	6	3			
97.55	-	-	-	-	-	4	202	8	-	-	-	-
97.60			74	-	43		165	5	-	-	-	-
97.65	-	-	-	-	-		38	-	-	-	-	-
97.70			33	-	6				-	-	-	-
97.75	-	-	-	-	-		-	-	-	-	-	-
97.80	-	-	-	-	3				-	-	-	-
97.90	-	-	-	-	3				-	-	-	-
100.29	5	-	30	-	255	25		3		10	16	11
100.30	-	212	82	-	177	19	4				34	13
100.35	-	-	-	-	-	-	10	3	-	-	-	-
100.40		49	24	-		25	36		2			2
100.45	-	-	-	-	-	19	35	6	-	-	-	-
100.50			3	-	3	30	35	3				
100.55	-	-	-	-	-	52	60	7	-	-	-	-
100.60	-		14	-		18	26					
100.65	-	-	-	-	-	24	15	-	-	-	-	-
100.70				-				6				
100.75	-	-	-	-	-		-	-	-	-	-	-
100.80				-								
100.90				-					-	-	-	-
100.100	-	-	-	-	3	-			-	-	-	-
103.30	-	-	-	-	277	16	1	-		4	4	5
103.35	-	-	-	-	112	3	6	-		3	9	
103.40	-	-	-	-	10	29	8	-				
103.45	-	-	-	-	-	36	-	-	-	-	-	-
103.50	-	-	-	-	143	8	6	-	-	-	-	-
103.55	-	-	-	-	-	NQ	8	-	-	-	-	-
103.60	-	-	-	-	3		14	-	-	-	-	-
103.65	-	-	-	-	-			-	-	-	-	-
103.70	-	-	-	-				-	-	-	-	-
103.75	-	-	-	-	-			-	-	-	-	-
103.80	-	-	-	-		2		-	-	-	-	-
103.90	-	-	-	-		-		-	-	-	-	-

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
105.32	93	27	18	-	-	-	-	4	-	-	-	-
105.35	15	17	54	-	-	-	-	11	-	-	-	-
105.40			2	-	-	-	-	3	-	-	-	-
105.45	-	-	-	-	-	-	-		-	-	-	-
105.50			8	-	-	-	-	3	-	-	-	-
105.55	-	-	-	-	-	-	-	5	-	-	-	-
105.60		6		-	-	-	-	3	-	-	-	-
105.70		3	4	-	-	-	-		-	-	-	-
105.80			-	-	-	-	-		-	-	-	-
105.90	-	-	-	-	-	-	-		-	-	-	-
107.32	-	-	-	-	48	13		-		6	4	5
107.35	-	-	-	-	15	17	22	-				3
107.40	-	-	-	-	13		9	-				-
107.45	-	-	-	-	-	7		-	-	-	-	-
107.50	-	-	-	-	68	32	9	-	-	-	-	-
107.55	-	-	-	-	-	-	33	-	-	-	-	-
107.60	-	-	-	-		5	6	-	-	-	-	-
107.65	-	-	-	-	-	-		-	-	-	-	-
107.70	-	-	-	-				-	-	-	-	-
107.80	-	-	-	-				-	-	-	-	-
110.33	29	37	-	-	119	8			2			16
110.35	8	21	5	-	143	13	3					
110.40		2	9	-	10	36		2				
110.45	-	-	-	-	-	10	8	-	-	-	-	-
110.50				-	6	4	7					
110.55	-	-	-	-	-	-		-	-	-	-	-
110.60	-			-								
110.65	-	-	-	-	-	-		-	-	-	-	-
110.70	11			-	6				-	-	-	-
110.80			-	-	3				-	-	-	-
110.90			-	-					-	-	-	-
113.30	-	48	160	29	23	14		3	3			42
113.35	-	104	27		3		3	8			-	
113.40	-					3					7	
113.45	-	-	-		-				-	-	-	-
113.50	-				-				-	-	-	-
113.55	-	-	-	3	-		10	5	-	-	-	-
113.60	-				6				-	-	-	-
113.65	-	-	-	3	3			-	-	-	-	-
113.70	-		-						-	-	-	-

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
115.27		-	-	-	-	-	-	-			-	-
115.30	-	-	-	-	-	-	-	-			-	-
115.35		-	-	-	-	-	-	-			-	-
115.40		-	-	-	-	-	-	-	-	-	-	-
115.50		-	-	-	-	-	-	-	-	-	-	-
115.60		-	-	-	-	-	-	-	-	-	-	-
115.70		-	-	-	-	-	-	-	-	-	-	-
117.26	-	22	42	8	6		15	7	2			3
117.30	-	9	9	11	22		14	22				
117.35	-	64	101	25	6	21	15				-	
117.40	-	22	119	32	181		9	7				
117.45	-	-	-			2	19		-	-	-	-
117.50	-	9	20			13	3		-	-	-	-
117.55	-	-	-				4	4	-	-	-	-
117.60	-		14	3					-	-	-	-
117.65	-	-	-				3	-	-	-	-	-
117.70	-	11	-		3				-	-	-	-
120.25						6	4	9			2	
120.30		2	21	39	18	4	37	66				
120.35			24	45			8	6				
120.37	-	-	-	-	-	-	-	4	-	-	-	-
120.40	-	-	-	48	2	1		10	-	-	-	-
120.45	3	3	497	3			3		4			
120.50		3		27	24	6			9	16	2	
120.55	-	-	-	3		5	12		-	-	-	-
120.60									13	3		
120.65	-	-	-					-	-	-	-	-
120.70										4		
120.80												
120.90												
123.37		11	28	21	72	120	64					
123.40	2	6	36	57	2	12	21		3		2	
123.45	-	-	-	18	9	4	3	2	-	-	-	-
123.50					6			6				
123.55	-	-	-			3		-	-	-	-	-
123.60									-	-	-	-
127.34		-	92	50	32	3						
127.40		-		37	47		10	10				-
127.45	-	-	-	11	23	7		9	-	-	-	-
127.50		-		6		3						
127.55	-	-	-	15				-	-	-	-	-
127.60									-	-	-	-

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1952

	Cruise and Month											
	33	34	35	35 Late	36	37	38	39	40	41	42	43
Sta.	Jan.	Feb.	Mar.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
130.30	3	2		35	3		26					
130.35			90	8		3	6					
130.40			161		3	3	7	9				
130.45	-	-	-						-	-	-	-
130.50			9		15							
130.55	-	-	-					-	-	-	-	-
130.60					3							
130.70		-	-	-	-	-	-	-	-	-	-	-
130.80		-	-	-	-	-	-	-	-	-	-	-
133.25				25	14			-				
133.30		9		63	23							
133.35	-	-	-			3	7		-	-	-	-
133.40				3			3		-	-	-	-
133.45	-	-	-						-	-	-	-
133.50		-					NQ	3	-	-	-	-
133.60		-	-			-	-	-	-	-	-	-
137.23											2	
137.30				8	44			1	15			
137.35	-	-	-	-	5				-	-	-	-
137.40				26				2	-	-	-	-
137.45	-	-	-		23				-	-	-	-
137.50				-				15	-	-	-	-
137.60		-	-			-	-	-	-	-	-	-
140.30	-	7	-	-	-	-	-	-	-		-	-
140.35	-		-	-	-	-	-	-	-	-	-	-
140.40	-		-	-	-	-	-	-	-	-	-	-
140.50	-		-	-	-	-	-	-	-	-	-	-
143.26	-		-	-	-	-	-	-	-		-	-
143.30	-		-	-	-	-	-	-	-	-	-	-
143.35	-		-	-	-	-	-	-	-	-	-	-
147.20	-		-	-	-	-	-	-	-		-	-
147.25	-		-	-	-	-	-	-	-	-	-	-
147.30	-		-	-	-	-	-	-	-	-	-	-
150.19	-		-	-	-	-	-	-	-		-	-
150.25	-		-	-	-	-	-	-	-	-	-	-
150.30	-		-	-	-	-	-	-	-	-	-	-
150.40	-		-	-	-	-	-	-	-	-	-	-
Totals	1523	2485	3155	662	4511	2672	3155	1843	419	292	547	433

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